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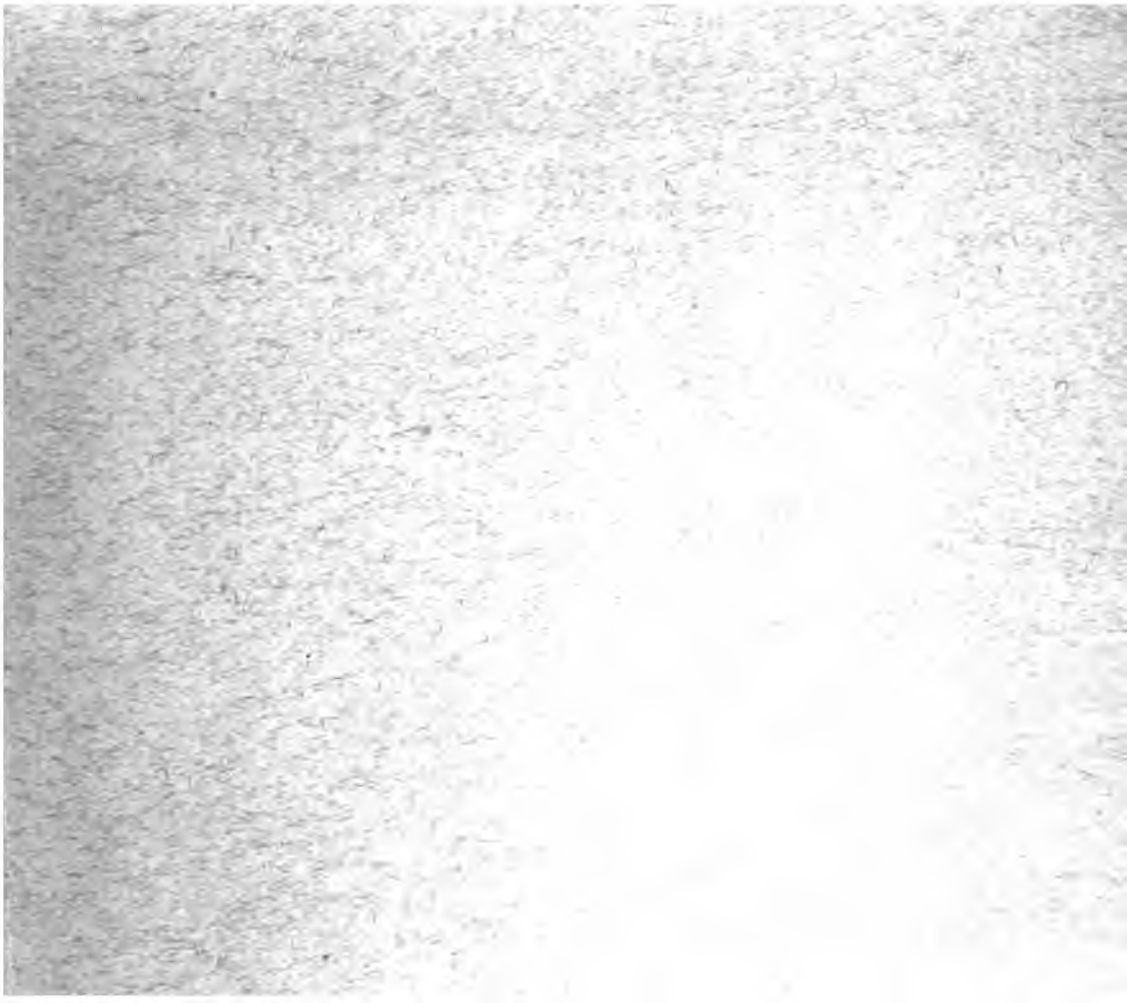
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TENURE OF LAND AMONG THE INDIANS

BY GEORGE BIRD GRINNELL

The civilized man and the savage man are utterly unlike in mental attitude. Their ways of looking at many material and most abstract things and their methods of reasoning are wholly different. This is so true that in many cases it is difficult for either to comprehend the other's point of view, even after it has been elaborately explained. In such cases even the white man must use new modes of thought, and must set aside for a time all that he has been taught; he must abandon his axioms and must put himself again in the position of a child who has to learn things from the foundation, with the added difficulty that the grown man must unlearn all that life's experience has taught him.

Thus there is nothing in an Indian's traditions or experience that enables him even to imagine the ownership of land by persons, although he regards personal property much as we do. His food, arms, and clothing, his horses and other livestock, are his to do what he pleases with: to sell, to give away, even to destroy. He may have rights in less tangible things. He may have the sole right in his tribe to carry some ceremonial object, to sing some sacred song, to tell some particular story. This is a property right that is respected by others and one that he may usually divest himself of by giving it away or by selling it. A man who belongs to a certain society, on leaving the society may sell his place in it to another, but such sale must be confirmed by the members of this society. These views and practices are closely analogous to those of civilized man.

But with regard to the ownership of the soil the case is quite different. Many savages, but especially our own Indians, are ab-

solutely unacquainted with the ideas held by the whites of property in land. They cannot conceive of the individual ownership of land; they think of their land as held by the tribe for those who shall come after them, who in turn may occupy it.

At the time of the discovery of America so much of the land now belonging to our nation as was occupied or controlled by anybody was, of course, in the possession of the aboriginal inhabitants. There was no individual ownership of land, but there was tribal ownership. In some cases a tribe occupied certain lands to the exclusion of all others. In other cases various tribes, friendly or allied, occupied or controlled certain territory from which they expelled other people who ventured on it. Again large tracts might be claimed — even though not permanently occupied or controlled — by half a dozen tribes and might serve as hunting grounds for them, where at any time hostile tribes might be encountered and where war might be a part of every hunt. In earlier times the lands bordering the Ohio river in Ohio, Indiana, and Kentucky, and later those along the Yellowstone and the Missouri, in the country of the Beaverhead, and about the Three Forks of the Missouri, constituted in this way debatable ground.

Often when the white man came the Indians received him in friendly fashion and gave him permission to camp in their territory and to put up permanent buildings. A little later, individuals or groups of individuals, who might be chiefs or principal men of tribes, sub-tribes, or villages, for a consideration gave the white men permission to occupy certain lands of greater or less area. Such transactions, we may assume, were sometimes believed by the whites to be absolute purchases of the land, while by the Indian we may feel sure they were always regarded merely as permits to use the land for a term and on conditions.

No Indian could understand the need or sense of expressing some of those conditions. Some of them the white man would have misunderstood if they had been expressed. The white man knew more than one way of having an individual and exclusive interest in the land. He was familiar with the idea of leases for years or for life; he was familiar with the estate in fee. His mind was imbued with the idea of exclusive tenancies running for years or

lives, and of exclusive individual ownerships, running from generation to generation. But the Indian's savage mind knew no such thing as absolute ownership of land by individuals. According to his view neither the tribe nor any member of it has in any piece of land rights other than the right to occupy and use it, the individual for life in common with his fellows, the tribe forever, to the exclusion of unfriendly peoples. In the past the old people occupied this land, hunted over it, gathered fruits from it, or cultivated it; and as they passed away the same operations were performed by one generation after another; and after those now occupying it shall have passed from life, their children and their children's children for all succeeding generations shall have in it the same rights that the people of the past have had and those of the present possess, but no others. This land cannot be sold by the individual or the tribe. The individuals now living on it may sometimes barter away their personal rights in it, but they cannot alienate the land, because the sole ownership of it is not in them. The tribe are tenants and in a sense trustees; and individuals can part only with the rights which they possess as members of the tribe, subject to the rights and duties of the tribe. The primitive Indian, when dealing with his friends, was usually an honest person. He would never think of selling anything to which he did not believe he had a good title. His horses, his blankets, his arms, his food, he might sell, or lose at gambling, but his land he could not sell and would not think of selling any more than he would think of selling the rivers or the springs. The rights in the land of those unborn were as clear as his own, as clear as those of his ancestors. These rights could not be alienated.[1]

[1] The almost universal reverence of the Indians for the earth is interesting in connection with their feeling about the ownership of land. The earth is regarded as sacred, often it is called the "mother" and it appears to rank second among the gods. A sacrifice of food is held up first to the sky and then is deposited on the earth, and perhaps rubbed into the soil. The first smoke is directed to the sky, the second to the earth, and then those to the four directions in order. Other sacrifices are commonly held up first to the sky, and then are held toward the earth. Before beginning to perform any sacred office, the priest or doctor holds his hands first toward the sky and then rubs them on the ground. "It is by the earth," they say, "that we live. Without it we could not exist. It nourishes and supports us. From it grow the fruits that we eat, and the grass that sustains the animals whose flesh we live on; from it comes forth, and over its surface run, the waters which we drink. We walk on it, and unless it is firm and steadfast we cannot live."

Until within comparatively recent times, all land sales and all treaties have been made by the Indians on the theory that they were passing over to the white people certain rights of occupancy —were lending them the use of the land. These rights in a general way were to live on the land, to pass over it, to cultivate it, to use its waters, the animals that lived on it, the birds that flew over it, and the fish in the streams; yet the Indians looked forward to a time at the end of the loan when the land should be returned to them, when nature would heal the scars made by the white man, when the animals and the birds would reëstablish themselves and the fish would increase in the rivers.

Until within a few years when I explained the manner in which the Indians looked at this matter, I think it had never been brought to the public notice, and even today the number of those who understand it is small. Nevertheless, I believe that anyone who investigates the subject among the North American Indians will find the feeling exactly as I report it, and it is quite possible that this view of the land may be the one generally held by primitive races. In books on African travel some evidence is to be found that the natives of the west coast hold just this view of the land they occupy and their rights in it. Rev. J. Leighton Wilson, who acquired his information on the subject during the early years of the last century, speaks of the feelings of the Kru men about their land in language that is quite unmistakable. He says:[1]

> The Kru people have no idea of the appropriation of land by individuals except for temporary purposes. It is regarded as common property, and any man may use as much of it as he chooses, but he cannot sell any. The only exclusive right which any one has is that of occupancy. If a man reclaims a piece of land from its primitive woods it is considered his and his descendants as long as they chose to use it, but it cannot be transferred like other property. The people, by common consent, may sell any portion of it to a stranger, for the purpose of erecting a trading factory, for a garden, or a farm; but in their minds this transaction, even when subjected to the formality of a written contract, amounts to little more than a general consent to the stranger living among them and enjoying all the rights of citizenship; and with the expectation that the land will revert to themselves, as a matter of course, should he die or leave their country. In some cases, where they have transferred a por-

[1] *Western Africa, Its History, Conditions, and Prospects*, page 138.

tion or the whole of their territory to a foreign jurisdiction, it is not probable that they have a correct apprehension of the nature of the transaction, whatever pains may have been taken to make them understand; and they do not comprehend it fully until the contract is carried into execution, in connection with their own observation and experience.

The matter has been touched on also by Mary Kingsley in her *West African Studies* (p. 436) in the following language:

> You will often hear of the vast stretches of country in Africa unowned, and open to all who choose to cultivate or possess them. Well, those stretches of unowned land are not in West Africa. I do not pretend to know other parts of the continent. In West Africa there is not an acre of land that does not belong to some one who is a trustee for it, for a set of people who themselves are only life tenants, the real owner being the tribe in its past, present and future state away into Eternity at both ends. But as West African land is a thing that I should not feel, even if I had the money, anxious to acquire as a freehold, and as you can get under native law a safe possession of mining and cultivation rights from the representatives living of the tribe they belong to, I do not think that any interference is urgently needed with a system fundamentally just.

It is but a few years since the Blackfeet Indians, whose reservation in northern Montana now reaches from Birch creek to Canada, appealed to me to know when they were to receive back the land which they had lent to the white people nearly forty years before. Prior to 1865, after gold had been discovered in Montana and people began to settle there, the Blackfeet were pushed north of the Marias river, and ever since, though with a constantly diminishing area of reservation, they have remained in the same general region. The land they still believe to be theirs is now worth vast sums, for it comprises some of the most valuable agricultural and mining territory in the state of Montana.

I have heard of Indians complaining of mining operations carried on in territory which they had passed over to the whites, their grievance being that when they thus lent the land they understood that only its surface was to be used, and that while the whites had the right to plow the soil and turn it over for cultivation, their rights of excavation did not go beyond this. They had no right to bore into the ground and to carry away the minerals.

The elder Indians often speak of the wrongs that their race

has suffered, especially with respect to their land, regarding which they have deep feeling — a feeling which we can hardly comprehend. Thus in the view of the Indians our treatment of them contains an element of outrage and extortion far beyond the worst that sympathetic friends of the Indians allege. We have not only taken from the Indian everything that is his own; we have not only plowed up the bones of his fathers and desecrated the places that he holds sacred; we have uprooted the tribe itself and have taken away from it the lands which it held as a trust for posterity, and which the tribe itself had no right to give to any man. That he has been expelled from the land which was too sacred to become even his own, is a bitter hardship, but it seems to him worst of all that the unborn children of his race have been robbed of their tribal birthright. On all the broad footstool of God there will be no spot where the Indians will have the rights that have belonged to their tribes from time immemorial. They will be entitled to the use of no foot of land except that which they may be able to earn in the white man's way — by their wits or by the sweat of their brow. Perhaps it is time and perhaps it is best that the Indians should fade away as we see them fading to-day.

Such is the feeling held by these Stone-age people, a feeling with which we may sympathize, though powerless to relieve their sadness. We may regret the crushing out of the race before the march of civilization as we regret the extinction of other natural things, but we must recognize it as nothing more than the operation of the inexorable natural law that the weaker must perish while the fitter shall survive.

Our notions of land ownership have developed through thousands of years. It seems to us now quite reasonable and expedient that one man should fence out others from his farm and that another should monopolize a lake and another a water power; but a primitive Indian can no more understand such private monopolies than the average American can understand how there could be a private monopoly of air or light.

The Indian's notions of land tenure, so distinctly primitive, could not find acceptance in our day and our civilization. It became evident long ago that the time would come when the communal hold-

ing of great tracts of land by Indian tribes must cease. But the American people scrupled to wrest from the Indian every foot of land that he possessed and give it over to the white man; and so, nearly twenty years ago, a law was passed providing that, as time went on, the Indians of the several tribes should have allotted to them small individual holdings of land, while the remainder of the tribal tract should be opened to settlement and sold under various restrictions, the money to be applied to uses of the Indians.

Where allotments had been made in carrying out this law, whites rushed in and bought the surplus land which they improved themselves or sold to others for improvement. Soon the allotments were all gone, and yet there seemed as many people as ever clamoring for land, and before long these white people began to try to lease from the Indians the allotments on which the latter had located, and succeeded in persuading the Government to assent to such procedure. Influential and enterprising speculators can usually induce their senators or representatives or delegates in Congress to go to the agent or the commissioner, or to the Secretary of the Interior, and persuade him that it will be for the advantage of the Indians to lease their allotments; it will mean money in the Indians' pockets; they will receive a rental greater than the value of any crops they can probably raise. An argument of this sort may very well appeal to an honest man, if he does not know that money is less important to the Indian than to be taught by slow degrees the lessons of civilized life. The Indian must learn first how to live on a piece of land, and then, last of all, he may learn how to live without land.

When the allotment law was passed and made applicable to all Indians it was supposed by many good people that the difficult problems of the race at last had been solved. In the passage of this law it was not considered — because the people interested in it had but little knowledge of the subject dealt with — that the conditions governing each tribe differed from those governing every other tribe and that therefore it is impossible to frame a single law that shall be so elastic that it will fit all conditions.

In many cases allotment has proved the greatest misfortune that could come to the Indians, and, as carried out at present (and the

same is true of the past), it is often an absolute bar to their progress. Having been permitted to lease their lands, and receiving their rents at regular intervals, they live from day to day in lodges in the old fashion, not working, not learning any lessons of thrift, but instead constantly sinking a little lower in helplessness and inefficiency. If they were obliged to live on their allotted lands and were instructed in the proper method of using them, the case would be different.

The whole trend of legislation is toward getting away the Indians' lands from them for white men. This is natural enough, but to carry the process through with speed, to terminate it in ten, twenty, or thirty years, seems cruel.

Moreover, a general law which provides for the allotment of a fixed area to the individual without regard to local conditions is unjust, unwise, and wasteful. The soil of the several Indian reservations varies from the most fertile to the most barren. The climate ranges from arid to moist; irrigation is needed here, drainage there. In some places not even the white man can make a living, toil he ever so hard. Sometimes two or more settlements of the country have taken place; a succession of dry years and crop failures have driven out the first people who took up and worked the land for awhile and then abandoned it; while a second group of settlers, perhaps more frugal and hardworking than the first, but at all events assisted by a succession of favorable seasons, are now making a living of some sort.

In 1890 when traveling through North Dakota near the Missouri river I found the farms largely abandoned. There had been a succession of crop failures, and the people seemed to have reached at last a point where they wanted nothing so much as to get away from the country. I saw deserted houses with cook stoves still standing in them, and farms with farm machinery abandoned in the field. It was as if the people had been stricken by a panic. The population of Bismarck, the capital of the state, had dwindled to 200 or 300 people, who were clustered in the middle of the town, within a fringe of attractive and more or less costly frame cottages, which had been abandoned by the fleeing population.

Some years later another wave of emigration reached this country and the land has again been occupied — this time by Russian peas-

ants, whose industry is untiring and whose frugality is astonishing. Helped for the last few years by favorable seasons and by their practice of selling everything raised on the farm for which a market can be found, and of consuming themselves the produce which is unsalable, they have succeeded in making both ends meet and are even doing well. But it would be folly to imagine that in that country the savage man who belongs there could earn a living by agriculture, even if he had been taught to plow, to sow, to reap, and to sell. What is true of some of the Missouri river agencies is further true of some of those to the Southwest, where without water nothing will grow out of the ground, while with water almost anything can be raised.

There are a number of reservations where owing to dryness, altitude, or soil conditions, farming is impossible, and where the people must support themselves as herdsmen if they are to live by their own exertions. It is a quite well established fact that no family can support itself on a herd of cattle which numbers fewer than 150 or 200. Of these 200 only a small proportion — roughly 10 percent annually — will be beef cattle, which can be sold. In the arid West from 20 to 40 acres of land are needed to support a horned animal for a year. The Bureau of Animal Industry, which I have consulted, seems to have nothing definite on this point, but the opinion of the cattlemen in the west, *i. e.*, the Dakotas and Montana, is as given. Assuming that 30 acres are required to support a cow throughout the year, 640 acres will support about 21 cows. If a man and his wife and five children in this dry country should receive an allotment of 640 acres each, they would then have pasturage for only 150 head of cattle. On the other hand, it may be fair to assume that some portion of such a tract could be watered so that it would produce a crop of hay and thus support a larger number of animals.

In a country which is cold, or dry, or which for any reason cannot be cultivated, in any allotments that are made the Indians should receive 640 acres to the individual. To give to a family in such a country no more land, or only twice as much as is given to Indians in a farming country, such for example as the Indian Territory, is to give them something that is useless to them except to be

leased as a part of the pasture of some cattleman who controls a large tract.

The Flathead reservation, which is now soon to be opened, is a farming country. It has many streams, there is considerable precipitation, there is a mild climate together with a soil on which crops can be grown. On the Blackfoot reservation, to the eastward across the mountains, there is little water, snows and frosts occur every month of the year, potatoes do not yield a crop more than once in five years, oats seldom ripen, yet it is a splendid country for fattening cattle. It is not a good country for breeding cattle except in small herds, where the animals can be looked after at certain seasons of the year.

Again, down in the country of the Northern Cheyenne, the Tongue River Indian reservation, there is little or no water; the Rosebud river and its tributary streams on the west of the reservation commonly go dry in June or July and there is no opportunity for irrigation. Tongue river, which forms the western boundary of the reservation, might irrigate some land if money were available to make a ditch, but cattle must be the support of these Northern Cheyenne.

On the other hand, on the Crow reservation, 60 or 70 miles to the westward, there are irrigation ditches which water the broad bottoms of the Big Horn and the Little Big Horn, and here after a while the Indians could be made to raise crops. I can conceive that the Crows might get along with 160 acres apiece, properly chosen along these ditches. The Northern Cheyenne, on the other hand, should have 640 acres, or at least 320 acres, to the individual.

The tide of Congressional sentiment is now setting strongly in favor of the policy of opening Indian reservations by allotting the lands, no matter how ill-prepared for such allotment the Indians may be. It may be futile to attempt to stem this tide, but it should be possible to have laws passed authorizing the Secretary of the Interior, in the case of certain reservations which are nonagricultural, whether from barrenness of soil, lack of water, or elevation, to allot to each Indian living on such reservations a section or at least half a section of land. This action seems to be essential if the Indians of such reservations are to continue to occupy portions of them and

to earn their living in the only way they can earn it there — by pastoral pursuits — in other words if they are to continue to be a settled people and not wanderers and beggars like the Cree of northern Montana. The President, the Secretary of the Interior, and the Commissioner of Indian Affairs are deeply interested in the Indians, and most anxious to do everything in their power to protect them. If the matter is properly presented to these representatives of the executive power, I believe that they will agree that the action above suggested is just and wise. It should be possible to persuade Congress of the justice of such a course, and all who care for right and fair dealing should unite in urging such action on Congress.

The patents issued for future allotments should be inalienable for life, or better still for one hundred years. The Indian should be obliged to keep his land; it will be something to anchor him, and after him his descendants, to the soil. In a generation or two such an anchor may mean the permanent prosperity of the remnant of the race.

I make no complaint here about the policy or justice of driving Indians by force from lands which we need. I seek only to point out that in many places, by an unwise application of the allotment law, a grave wrong is being done under the guise of a benevolent policy. It has been said hundreds of times that Indians, like children, have been incapable of guarding wisely their own interests in making treaties and in other bargains; but what I dwell on is the fact, which no person of experience with Indians can deny, that a bargain with a tribe to sell its land to others, so that others could hold it forever and distribute it among private persons, is a transaction which no Indian mind could comprehend; consequently in the case of every land cession the Indian has been made to seem to agree to something which the mind of the primitive Indian could by no means grasp.

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THE SACRAL OR SO-CALLED "MONGOLIAN" PIGMENT SPOTS OF EARLIEST INFANCY AND CHILDHOOD, WITH ESPECIAL REFERENCE TO THEIR OCCURRENCE IN THE AMERICAN NEGRO

By JOSEPH BRENNEMANN

Whoever has carefully examined recently born children of the darker races, notably the Mongolian and the African, has been impressed by the nearly constant presence in the sacral and sacrogluteal regions of irregular areas of bluish pigmentation that contrast rather strongly with the general body color. For centuries Japanese physicians and writers have discussed and striven to interpret the occurrence of such pigmentation in children of their race, where it forms a peculiarly striking picture. Since Baelz first introduced this subject to the Western scientific world, about twenty years ago, a great deal has appeared in German, French, and Japanese literature about this peculiar phenomenon that is of interest from many points of view. In this discussion American anthropologists and physicians have taken a relatively insignificant part. This seems all the more strange because we have so great a wealth of easily accessible material at our very doors. Because of the inadequate treatment at the hands of our anthropologists of the phenomenon in question, and because of the fact that so few medical men, in my experience, know even of its occurrence, to say nothing of its meaning and distribution, it has seemed to me appropriate that someone should assemble the array of observations that have been made in the last few years and present them in the hope that they will prove of interest to both the anthropologist and the clinician. I will review briefly the literature of this subject, especially that of the last few years, and will record my own observations on children of the American negro.

Our earliest observations come from Japan. The well-marked, deeply pigmented blue spot of the Japanese baby forms a striking

contrast with the general body color. It may well be described as a type to which those of all other races may be compared. In the sacral, or sacro-gluteal, region of nearly all recently born Japanese children are found one or more well-defined, distinctly blue or grayish-blue spots varying in size from that of a small coin to that of an expanded hand. They may extend over both buttocks, or into the lumbar region, and isolated spots of identical nature may be found over the back, or shoulders, or extensor surfaces of the extremities — almost never on the ventral and flexor surfaces. They are not raised above the surrounding skin. They are not influenced by pressure or even made plainer by contrast with a blanched surface. In nearly all cases this pigmentation is present at birth and during the latter months of intrauterine life. It may, however, appear weeks and even months after birth. The blue color deepens for a time, then gradually fades away, leaving no trace after a few years. It rarely persists to the sixth or seventh year, and only very exceptionally to adult life.

In Chinese and other Mongolian peoples identical spots are found with the same characteristics, except that their color is reported as more bluish-gray than blue. Chemin found it in 89 percent of Chinese children during the first year, in 71 percent during the second year, and in 19 percent from the third to the eighth year. Matignon found it in 97 to 98 percent of pure Chinese up to two and a half years of age, in 10 to 12 percent after four years, and only rarely after the fifth year.

In 1885 Baelz, a German physician who held a clinic in Tokio for many years and married a Japanese woman, called the attention of European scientific men to this characteristic of the Japanese race. His observations extend to other Mongolian peoples and he considered it a distinct racial characteristic. It was he who introduced the term *Mongolen Fleck* into German literature, where it is still used extensively. When later he found similar spots in two Indian children in northern Vancouver, British Columbia, he considered the occurrence to furnish an argument in favor of Mongolian descent of the American Indian. Baelz made careful microscopical examinations of these spots in Japanese children and described large pigment cells deep in the corium that were peculiar to them. A series of articles appeared from this author up to 1902.

More than a hundred years before this time Saabye, a Danish missionary, noted these spots in new-born Eskimo in Greenland. His notes were not published until 1816.

In 1849 Eschricht published his accurate observations on Eskimo children.

In 1895 Grimm treated the subject from a morphological standpoint so exhaustively that little has been added to it (Adachi). He examined, macroscopically and microscopically these areas of pigmentation in Japanese children and confirmed the findings of Baelz. He found the characteristic pigment cells deep in the corium as early as the fourth month of fetal life and states that the spots begin to appear at this time.

It remained, however for a Japanese, Buntaro Adachi, working in the laboratory of the German anatomist Schwalbe, in Strassburg, to place the whole subject on a firm scientific basis. In 1903 he published the results of his exhaustive study of pigmentation of the skin in man and monkeys. He had long believed that these pigment spots were not distinctly Mongolian as taught by Baelz, and he started out to look for the causal cells in the skin of white children. His findings led him into a study of pigmentation in general in man and monkeys, and to a special study of the morphology of the "Mongolian" spot. He examined sections of the skin, from a great many different places in each of seventy-six Europeans, including seven embryos, and of twenty-six monkeys of different kinds. In both man and monkeys he found pigment in the epidermis and corium independent of one another, more or less in the same proportion, and very variable in amount in different races and individuals.

It was the pigment found in the corium that was especially significant. This Adachi found in two distinct layers of pigment-bearing cells, as follows:

1. A faint layer of small cells high up in the corium, close to but entirely separate from the well-known deeply lying epidermal pigment. These were found widely distributed but of little importance.

2. A deeper layer made up of much larger spindle-shaped or stellate cells, forming in sections a distinct horizontal band deep in

the corium. In monkeys these are found widely distributed, and their amount is usually inversely proportional to that of the epidermal pigment. If both epidermal and deep corium pigment are scant, the general color of the monkey is pale, or flesh colored, as in the lemur. If the former is abundant and the latter scant or absent, the color is brown as in the chimpanzee. If the opposite condition prevails, *i. e.*, little epidermal pigment and much deep corium pigment, we get the well-known shimmering blue color of certain monkeys like cynocephalus, macacus, etc. If both pigments are very abundant, we have the dirty bluish-brown color of the orang-outang.

In man these deep corium cells are found only in limited areas, usually in the sacro-lumbo-gluteal region, where, if sufficiently abundant to show through the overlying layers, they appear to the eye as our blue pigment spots. These are the same cells that Baelz and Grimm had described many years before. In both man and monkeys these deep-lying dark pigments appear blue on the surface in accordance with the same law that makes black carbon appear blue in the tattoo mark. In fact many of these spots resemble nothing else so much as they do tattoo marks.

Adachi's classical work, so far as it pertains to the human being, is limited to the white European. Yet in 10 out of 24 cadavers of white children up to two and a quarter years of age he found these characteristic large pigment cells deep in the corium, always in the sacral region only, except in 4 cases where they were found in the gluteal region also. In the remaining 52 cases he found them only twice and with some difficulty. In none of 7 embryos did he find them, and only twice in 7 newly-born children. The maximum occurrence was from the sixth month to the third year rather than at birth. It will be remembered that Grimm found them in the Japanese fetus at the fourth month. In none of these cases could the presence of a blue spot be demonstrated; however, it would be difficult to do so on a cadaver with the usual post-mortem discoloration. Adachi reasoned that this evanescent pigmentation is a normal human characteristic, found in different degrees in all races. The last few years have amply shown how well grounded are his findings and also the theories he based on them.

Observations have come from all sides. How universal this peculiar phenomenon is, that only a few years ago was considered a sign of Mongolian descent, is shown by an enumeration of the various races and peoples from whom definite reports have been obtained. I have spoken of the Japanese and the Chinese. In sections of the latter Birkner (1904) demonstrated the causal deep corium cells. Among Koreans these spots were reported by Baelz and Sekiba; Anamites by Chemin; Malayans by Kohlbrugge and Baelz; Javanese by Kohlbrugge, ten Kate, Deniker, and Baumgarten; Indonesians by Kohlbrugge and Riedel; among the inhabitants of the Celebes and other islands of the Pacific by Riedel; Igorrotes of the Philippine islands, by R. M.; Samoans by von Buelow; Hawaiians by Okabe, ten Kate, and Baelz; among the Eskimo by Hansen, Saabye, and Eschricht.

Among Indians they were reported by Baelz, who found them in two children in northern Vancouver, British Columbia. Starr (1903) examined all of the seven babies of a Maya Indian village in Central America, and found on all of them a bluish, or bluish-purple spot, limited to the sacral region and disappearing by the tenth month. Three half-breeds did not show it. Lehmann-Nitsche (1904 and 1905) reports his observations on Araucanian Indians in Argentina. He found a pigment spot as large as a hand in the sacral region, extending to the gluteal and lumbar regions, with occasionally an accessory spot. He considers the term violet, or mulberry-colored, as most distinctive, and states that the color did not differ strikingly from the rest of the body color. No definite observations are reported, to my knowledge, on Indians of the United States.

Among half-breeds, such as Chino-Japanese, Chino-Malays, and others, where both races have it normally, the spot is found.

Among Euro-Japanese, Aino-Japanese, and other mixtures of dark and white races, the spot nearly always occurs, but is fainter, less extensive, and disappears earlier (Grimm). If the child strongly resembles the white parent the spot is more apt to be absent than in the darker children. Among Euro-Javanese Baumgarten found it in 90 percent of cases.

From Africa we have no very definite reports. Adachi refers

to Pruner Bey, Schweinfurth, and von Helmhold, who noted in newly-born African children grayish or slate-colored spots in various regions of the body. Although no statements are made as to definite localities, there seems little doubt, after my own observations, that what they saw was our pigment spots. R. M. speaks of their occurrence among the Negritos of the Philippine islands, Riedel among the Papuans, and Chemin reports an observation in Madagascar. Baelz speaks of their occurrence among mulattos of Brazil. Lehmann-Nitsche (1904–05) examined critically half a dozen negro half-breeds of Argentina between six months and two and a half years of age. He found a sacral spot as large as a hand, violet, gray, or slate-colored, not blue as in the Japanese, and not strikingly different from the rest of the body color. He does not report its presence in other parts of the body. Among these people the spot is known as *la mancha morada* (violet or mulberry-colored spot), and the author suggests the adoption of this term by Spanish writers. Wardle (1902) points out the opportunity for study of this subject in this country and regrets that no one has seized it.

There is no record of microscopical examination of such spots in negro children. Frederick (1905) records an exhaustive study in Schwalbe's laboratory of the skin of a four-months colored child. He refers to Adachi's work, but apparently made no observation on the pigment spots.

Ashmead, of New York, at one time foreign medical director of the Tokio Hospital, Japan, in a recent compilation (1905) defends the strange thesis that the presence of this spot always means negro descent! He contributes no new facts or observations.

During the last few months I have carefully examined 40 colored children under one year of age with reference to the occurrence and distribution of these pigmented areas. The American negro of whom one can say with assurance that he has no white blood is rare. One must think of practically all of these babies then as of mixed white and black blood — in no case, however, of this generation, but always going back at least two or three generations. The color varied from that of a white baby to that of an adult negro, from white through light brown to black. In only two cases was there any other known admixture; in these there was some Indian blood.

About one-half of these cases were less than one week old. There seems still much uncertainty as to the degree of color in the newly-born negro child. Adachi (1903), for example, says: "One finds everywhere mentioned that the newly-born negro enters the world with the same white skin that the European does. And yet not rarely travelers speak of faintly-colored newborn children of the black race." A colored child of very light parents may be indistinguishable at birth, so far as color is concerned, from a white child, but the ordinary colored child enters the world noticeably pigmented, and many are very black from the start. The color deepens for some years, especially in those born very light. The deepest black of the adult full blood, however, one rarely, if ever, sees in the newly born.

Of the 40 cases, 35 showed well-marked areas of bluish pigmentation at the time of examination. In one other child of nine months nothing could be made out any longer with certainty. Shortly after birth, however, there was a deep blue sacral spot as large as a hand that has disappeared only in the last few months.

Two other babies of seven and nine months respectively did not show the spot, and the mothers stated that it never had been present. In these two cases it may easily have been overlooked earlier. Another child was seen only during the first two weeks. It was very light and may have developed the characteristic spot later, although I have never seen a case in which the spot appeared after birth. One other baby I saw a few days after birth and again at four months. This child and both parents were very light brown. The child was darker at the last examination, but no spot was present at any time. All of these four children were very light except one, nine months old, who was very dark. I think one may safely assume that in this last case the spot was present earlier and that if any was left it was covered by a heavy black epidermal layer of pigment. The spot was seen in 90 percent of cases and probably occurs in at least 95 percent of ordinary colored children before they reach the second year.

In the remaining 35 cases there was always a distinct area, usually of maximum intensity, at the very point where the rima glutea widens out on the sacrum. This area varied in size from that of a

dime to that of a dollar, showed no special symmetry, and was not abruptly defined. In 24 cases similar areas were found on the buttocks; in 19, in the lumbar region; in 8, on the back, shoulders, and extensor surfaces of the legs and feet; in 4, on the extensor surfaces of the arms and hands — only once on a flexor surface — never on the ventral surface nor on the head or neck.

The color varied from a dull bluish-gray, or slate color, to a distinct dull deep blue, or violet, or plum color. Lehmann-Nitsche, it will be remembered, found the color in mulattoes of Argentina "violet gray or slate-colored, not blue as in the Japanese" and "little distinct from the rest of the body." The personal equation enters very much into finer determination of shades of color. I have seen well-marked Mongolian spots on two Chinese babies and was impressed by their resemblance in every way to those found in brownish colored babies. The contrast of blue and brown differed but little in intensity, it seemed to me, from that of the Mongolian. In darker and older babies a dark slate-blue often merges imperceptibly into the surrounding black.

Four or five of the cases had peculiar spots that appeared *sui generis*. The latter were always round, sharply defined, about one-half to one centimeter in diameter, deeply blue, looking exactly like tattoo marks. They were all in the gluteal or lumbar region, except in one case where there was one on one shoulder and two on the other.

I will describe a few cases in detail to convey a more definite idea of what these areas are like in the colored child.

1. Baby W., a typical case. Æt. 5 months. One grandparent on each side white. Child was "almost white" at birth — considerably darker now. Small irregular area of distinctly bluish discoloration at upper end of rima glutea more or less continuous with a bluish spot the size of a half-dollar over the right, and two each the size of a quarter over the left, buttock. Slight bluish discoloration over the lower portion of the lumbar region. More marked at birth than now. Began to get darker two weeks after birth; increased in intensity till about one month ago. Then "real blue" according to the mother. Since then fading rapidly and child getting darker. When seen one month later all of the spots were much paler.

In many cases only a sacral spot was found. In others the distribution was so widespread that I believe one is justified in thinking that there are colored babies whose general color effect at a given time is bluish- or violet-black rather than black or brown; *i. e.*, cases in which deep corium pigment — if we may assume its causal relationship — exceeds, or at least equals, that of the epidermis. I will cite two additional cases that illustrate this point.

2. Baby B. Æt. 8 months. Medium brown color. Mother and father moderately dark brown. Great grandfather white. Dark blue wedge-shaped spot at upper end of rima glutea; raphe and adjacent sides dark blue. Fairly well marked over inner side of right buttock; at upper end of same a small, round, sharply-defined spot 1 cm. in diameter, deep blue like a tattoo mark. Greater part of the left buttock discolored bluish; maximum at middle. Few small bluish spots in the lumbar region and on the back. One just back of the *ant. sup. sp.* of the ilium: pale blue, size of a dollar. Broad transverse band of bluish discoloration across the upper part of the back and over the left shoulder. Few small spots on the extensor surfaces of left upper and fore arm. Faint spot on dorsum of left hand. Bluish discoloration over right deltoid and on dorsum of right hand. Four well-marked spots each the size of a cent on extensor surface of left leg, ankle, and foot. Eight to ten spots a few millimeters in diameter on upper extensor and lateral surface of left thigh. Bluish area in front of the right ankle the size of a dollar. I examined this child four months later. All spots were very much paler or had disappeared. The bluish pigmentation was doubtless more intense prior to my first examination.

3. Baby H. Æt. three and one-half months. Medium brown; parents same. Grandfather white. Deep blue spot at lower end of sacrum, size of silver half-dollar. A number of small paler spots over buttocks and lumbar region. Area of pale blue along left side extending from near axilla to costal border and toward the spine, about two by four inches in extent. Similar spot on right side nearly as extensive. Round spot 1 cm. in diameter on left shoulder, like heavy tattoo mark. On left shoulder a similar spot 1 by 2 cm. in area, and back of the right clavicle another 2 mm. in diameter.

A very distinct, sharply-defined, pale blue area in front of the left knee and tibia, the size of a dollar. A narrow bluish band entirely around the right ankle, *i. e.*, also on the flexor surface. Many other portions of the body gave one the impression of a bluish tint. The mother did not know whether there had been much change since birth or not. An older brother had convulsions and was deeply cyanotic before this baby's birth. The mother thought that the present baby was "marked" by her seeing her blue baby.

It was impossible to establish any definite relationship between the intensity of these spots and the amount of white blood in any given case, because of the uncertainty concerning ancestors more than one or two generations removed. I think it is probable that the actual amount of pigmentation is greater in black children, while as a matter of fact it usually appears more conspicuous in lighter brown children. Black very easily obscures dull blue, while brown presents a favorable contrast. On the whole the degree of pigmentation of these spots and its extent vary so widely in different cases that one can predict nothing definitely from the degree of general pigmentation.

I have examined a great many older colored children but have not tabulated my results. After the first or second year it becomes impossible to decide in the great majority of cases whether a spot is still present, hence statistics would have no value. By this time the areas have become faint or absent, and the dark epidermal pigment has covered the remnant. I have never seen a spot well-marked after the third or fourth year.

Sections from the skin of the sacrum of a moderately-pigmented still-born negro child were examined microscopically. The child was apparently normal in every way, death having been due to strangulation by the cord wound about the neck. The mother was black, the father was said to be much lighter; both probably had some white blood. No blue spot could be made out, but the child had been dead 24 hours when examined. Postmortem discoloration and probably opacity of the superlying skin would naturally obscure such spots. From the degree of general pigmentation of both mother and child I feel certain that a well-marked pigment spot would have been present if the child had been born alive.

Two pieces of skin were examined — one from the median line at the lower end of the sacrum, in which place it will be remembered the spot was always found if present at all; the other from the less-pigmented ventral surface of the chest near the axilla.

The skin from the chest was thin; the epidermis showed well-marked brownish granular pigmentation in the deeper layers. *No pigment could be found in the corium.*

The sacral skin was much thicker. The epidermis contained the same brown granular pigment in the usual location, but in greater amount than in the other sections. The upper part of the corium was apparently wholly free from pigment cells for a depth varying from one, more commonly two, to three times the thickness of the epidermis. The remainder of the corium, from four to six times the thickness of the epidermis, was thickly strewn with large pigment cells that formed a very striking picture in unstained sections under the low power of the microscope. These cells were for the greater part spindle-shaped; frequently, however, they were stellate or branched, or irregular in shape. In many of them distinct oval nuclei could be seen. The rest of the cell was packed with rather coarse brown pigment granules, of the same tint as the epidermal pigment. In many places one could see only irregular masses of these granules, probably due to a tangential section of a cell. The cells were large, commonly from three to ten times the length of the ordinary connective tissue nucleus. Their long axes were usually parallel with the connective tissue fibers. With a No. 6 Leitz objective as many as 15 to 20 of them could often be found in one field in sections 20 μ thick. (See plate 1.)

So closely do these cells resemble in every way those described by Baelz, Grimm, Adachi, and Birkner, in Japanese, Chinese, and Caucasian children, that no doubt can remain as to their identity. This demonstration of these cells in another race in which the blue pigment spot is so prominent a feature still more firmly establishes their causal relationship to these peculiar areas of pigmentation.

Adachi's conclusion that these pigment spots are found in all races of mankind still required verification by demonstration on a pure Caucasian child. Sekiba, in a letter to Adachi, stated that he found the pigmentation present sixteen times in one hundred and

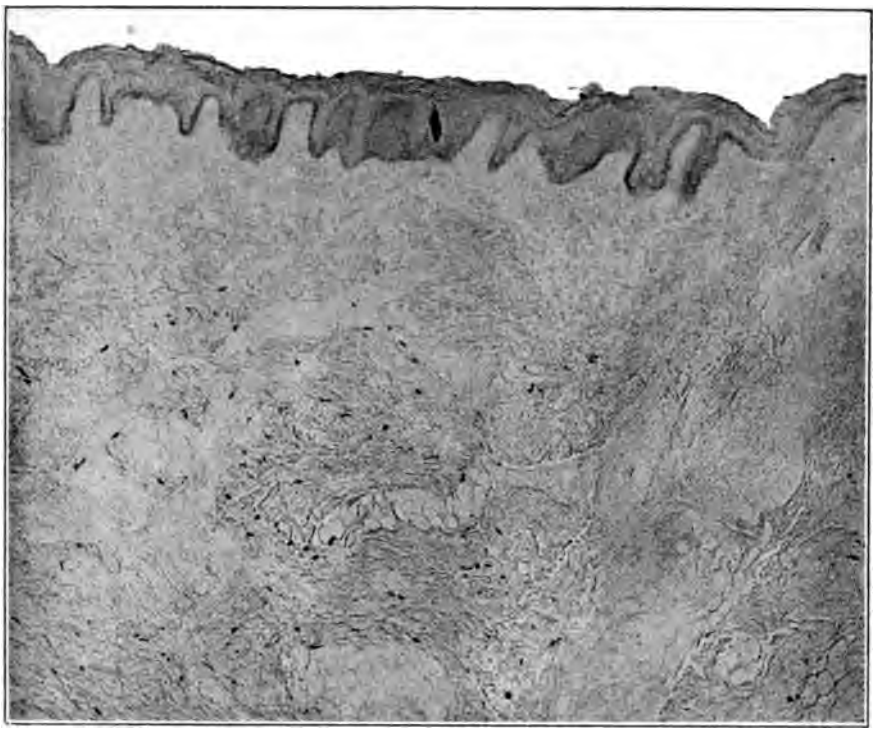


FIG. 1. — Microphotograph of unstained section (20 μ) of skin from the lower sacral region of a stillborn negro child. The epidermis shows the usual pigmentation of the Stratum Malpighii. The upper third of the dermis is wholly free from pigment. The lower two-thirds are dotted with the large, dark, spindle-shaped pigment cells that cause the blue "sacral spot"

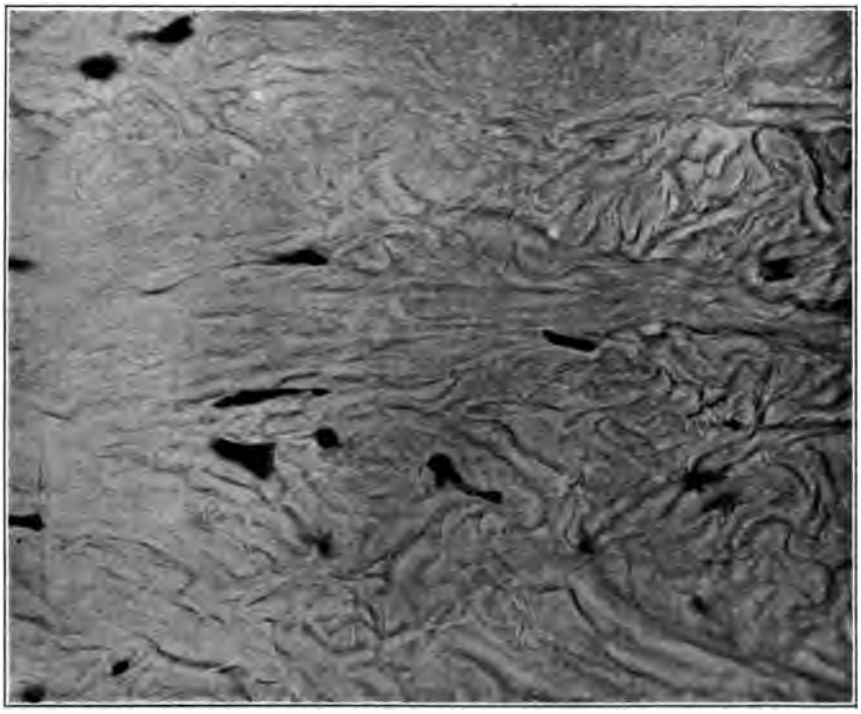


FIG. 2. — Same as Figure 1, more highly magnified (about 600 diam.). Sections unstained, 20 μ thick. The large pigment cells show as black irregular masses embedded in the connective tissue of the dermis.

fifty children of pure Ainos, a primitive, nearly extinct white race of northern Japan. Grimm, Koganei, and others denied its presence in this white race, but their observations were very limited. Baumgarten, in a letter quoted by ten Kate, says: "In Europeans of pure blood, too, this spot occurs, but rarely." Tsuboi, in a personal communication to Adachi, said that it occurs in Europeans during embryonic life, but that it disappears before birth. This view has had no confirmation and is distinctly opposed by Adachi's findings.

The first well-authenticated case in a European child was reported by Adachi himself and a Japanese co-laborer, Fujisawa, in the same number of the *Zeitschrift für Morphologie und Anthropologie*, in which his main work appeared. After examining fifty children in Seitz's clinic at Munich, Fujisawa found one of apparently pure Caucasian lineage who had two faint but distinct bluish spots. Nothing was noticed at birth, but a week later the grandmother observed on the right buttock a small round bluish or slate-blue spot. A week later she found on the same buttock and partly concealed in the rima glutea another one as large as a thumb. Fujisawa reported the same case two years later (1905) in greater detail. The spots were still present but much paler. A second child born to the same parents had three distinct bluish spots with the same characteristics as those of the older child. One naturally thinks of a possible contamination by a dark race. Epstein of Prag (1906) refers to the historical fact that in the thirteenth century Mongolian hordes penetrated as far west as Olmuetz in Maehren. The father's people came from this region. One might attribute these spots, then, to a recurrence of a remote ancestral characteristic, or to a persistence, in spite of very great dilution, of a tenacious race characteristic. The occurrence of two cases in the same family would seem to add weight to this theory.

If this objection to Fujisawa's cases leaves doubt as to the occurrence of the *Mongolen Fleck* in pure white children, the further report of Epstein (1906) should remove any doubt from the mind of an unprejudiced person. He describes five cases that he has seen in the last two years and estimates the total number of cases that he has seen in the last twenty years at twenty-five. In his

earlier cases he was at a loss to explain them. All of the five reported cases were children under fifteen days old, except one who was ten months old. The latter was seen again at two and one-half years. The large, well-marked blue or blue-gray spots were still visible, but smaller and paler. The spots in these white children apparently differed in no essential way from those found in darker races. The color was bluish, or bluish-gray, and in every case they were found in the sacro-lumbo-gluteal region. Epstein estimates their frequency in white children at about one in six hundred.

With the report of these well-authenticated cases from a country where racial contamination may be excluded with considerable certainty, there seems little doubt that the *Mongolen Fleck* of Baelz is found also in the white race and so in all races of mankind. The constancy with which we find the identical characteristics of location, time of occurrence, duration, and color (always blue, or bluish, or violet), seems to leave no doubt that in all these cases we are dealing with the same morphological entity, although the causal pigment cells of Baelz and Grimm have been demonstrated in only a few races.

What significance shall we attach to this peculiar phenomenon, and how interpret it biologically? A characteristic so striking is sure to find many explanations and to give rise to many superstitions. Among the common people of Japan it has been considered a result of coitus during pregnancy (Adachi), or as a mark made by the god Kami-Sama who presides over births. Japanese writers have offered many solutions. In the seventeenth century Soha Hatona, and his sons after him, applied a paste to the spots to purify the blood. Siguen Kagawa (1765) believed that the obi, or common belt, of the Japanese women, decomposed the blood of the mother, and this, stagnating, affected that part of the child lying closest to the abdominal wall, *i. e.*, the sacral region. Ransai Kagawa, a great obstetrician, more than a hundred years ago thought that it was due to contact of that part of the fetal body with the placenta. Hisao Yamada (1851) and Ritsuen Asado (1870) held the same view. Shiusei Omaki (1826) attributed its presence to the hot food taken by Chinese and Japanese mothers, the heat descending through the mother, decomposing the blood, and caus-

ing it to settle in the most dependent part of the fetus, the sacral region, or the shoulders and back, depending on the position of the fetus. Shinsai (1846) thought it due to coitus during pregnancy, the heat of the semen decomposing the blood of adjacent portions of the child in such a way that contact with the air caused it to turn blue.

Among Samoans the spot under consideration is considered a sign of Samoan origin. Half-breed Indians of Brazil call it *genipapo* because of its resemblance to the bluish-gray color of an indigenous fruit. *Tem genipapo* means "he has Indian blood." Brazilians state that the spot has a marked tendency to persist in half-breeds even if no new Indian blood enters in. Some pious Brazilians think of it as the "seal of Cain." Among Hawaiians the spot is called *he ila*, and the common people think it is due to the pregnant mother eating the fruit of a plant called *popolo*, which has a dark violet color when crushed. Among the Maya Indians it is called *uits* or *pan* (bread), and it is an insult to speak of it (Starr). Araucania nmothers know of its occurrence but attach no significance to it (Lehmann-Nitsche). In parts of Argentina, as above mentioned, the spot is called *la mancha morada*, or simply *la mancha* (Lehmann-Nitsche), and it is considered merely a sign of African blood. It often persists here, it is said, for a long time, even to adult life, and such expressions as "he has the mancha morada," or "he has the violet tail," or "he has the spot on the tail," are used to designate a man as mulatto, or to insult or offend him.

An interesting observation is reported by the same author in *Globus* (1905) from Santiago del Estero, Argentina. The spot is here considered pathological, and the child's foot is therefore pressed against the bark of a certain kind of tree and its outline cut with a knife. The bark is then lifted out. When this defect heals over the spot will have disappeared!

I have questioned nearly all colored mothers whose babies I have examined to see what view they took of the spot. I have been unable to find any evidence of superstition regarding its presence. A considerable proportion of them had never noticed it — had never heard of it — even many whose children were well marked. Others knew that their babies had a bluish mark, that it was the

rule for colored children to have such marks, and they looked on it as they would on other negro characteristics. As one mother put it: "They say it shows that a person is a real negro." I was surprised to find a number who considered these spots as birth-marks peculiar to their children. One very intelligent mother was watching with the keenest satisfaction the disappearance of this peculiar "birth-mark" — she had never discussed it with anyone and so did not know of its general occurrence. Still another, whose baby had a large dark bluish-purple spot, thought her baby "marked by a plum"! Many of them were very much amused at my interest in these spots, but none seemed to have the slightest reticence about speaking of them.

Among men of science an idea was current, before Adachi's work was published, that perhaps these spots were a storehouse for pigment to be used as needed. Wardle (1902) states such a view as follows:

> May not these evanescent congenital pigmented areas be regarded as the nuclei of more general pigmentation, the regions wherein occurs the first deposition of the cutaneous pigment normal to the darker races and peoples, and is their apparent disappearance not to be explained by the deepening of the tint of the whole body surface?

Ashmead (1905) gives as strange and unique an interpretation for one who is familiar with Adachi's work, as is his whole theory that ". . . . wherever you find black blood contaminating white there you will find the mulberry spot of Japan" — and, by inference, nowhere else! I quote his view without further comment:

> For myself, I believe that there is furnished to the offspring in utero, by the negro or negroid parent, too much pigment in the blood which must circulate through the placenta and the child during gestation. The excess settles in the part least developed, of least resistance in development or undevelopment, where another member once had been formed in distant ancestry; it is therefore of rudimentary growth. The child of such parentage cannot get rid of its excess before birth, in the shape of meconium or otherwise. The tendency in colored races is to the skin outwards, and not inwards. Thus metabolism is insufficient to rid the system of what was necessary to human creation thousands of years before the white man appeared.

Epstein (1906) still considers the phenomenon here dealt with a valuable Mongolian race characteristic, and thinks it "justifiable to

look upon the blue spots occurring exceptionally in the sacral and neighboring regions of white children as abnormal phenomena that are probably to be attributed to pathological factors in fetal development." If this spot has been found in practically all other races of mankind it is difficult to see why we should hesitate to acknowledge its morphologically identical nature in the white race when Adachi has demonstrated there in the same region, and at the same time, in the same portion of the corium, apparently the same pigment cells that cause the spot in darker races.

The view held by Adachi that we have here to deal with a rudimentary formation can alone, it seems to me, explain satisfactorily these strange spots. In monkeys epidermal and dermal pigments are formed independently and have presumably the same function. Either one or the other may be the more prominent in any locality, *which* being dependent on the species. In man epidermal pigment alone plays an important part. It too is formed independently of that in the corium. In the latter the superficial widely-distributed layer is very insignificant. The deeper-lying pigment cells of the corium still persist in man as a localized transitory condition, limited normally to the latter part of intrauterine life and the first few years of infancy and childhood. In darker races, where there is more pigment in general, these cells are still sufficiently abundant to appear as the bluish spots of the sacro-lumbo-gluteal region and of other localities where pigmentation is normally deep — persisting for a variable time, in isolated cases only, to adult life. In the race of least pigmentation, the Caucasian, the same pigment cells are present, under nearly identical circumstances, in nearly one-half of all children under two and a quarter years of age (Adachi) — probably a larger percentage of cases would be found if each one could be examined in all stages of its development. Very exceptionally do they occur in sufficient numbers or sufficiently concentrated to be visible as our blue spot.

We must think then of this pigmentation as a normal human characteristic, not a recurrence of a *lost* ancestral condition, *i. e.*, atavism, as suggested by Bloch, but the *persistence* in rudimentary form of what was once perhaps a more widespread and functional layer of pigment such as exists in certain monkeys.

It is interesting in this connection that in the higher or anthropoid apes there is a tendency to predominance of epidermal over corium pigmentation. One cannot, however, classify monkeys systematically on this basis. Neither can one reason that the greater prominence of sacral spots — *i. e.*, deep corium pigmentation — places the darker races nearer the common ancestor of man and monkey. Degree of pigmentation is determined by other factors, and the intensity of these spots is rather directly proportional to the degree of general pigmentation of the race and of the individual. Even in the white race both spots and cells have been found almost exclusively in dark individuals.

The occurrence at a certain stage only of early development is in accordance with our knowledge of many such vestigial structures. I need only mention lanugo hairs, the cauda humana, gill slits, etc. These corium cells would naturally appear at about the same time that the permanent epidermal pigment does. For a time both increase in intensity — then one gradually fades away. So in the Japanese our pigment cells are found at the middle of intrauterine life — in the Caucasian, after birth.

Why this remnant should favor the sacral and adjoining regions, when there is no such tendency in monkeys, for example, has not been explained. We are no nearer to a real solution when we suggest a possible connection with a primitive tail, or with a relatively late differentiation of the posterior end of the body which makes it *sui generis*, as shown, for example, by the comparatively frequent occurrence of pathological conditions and anomalies peculiar to this region. The frequent occurrence of these spots in other favored locations, such as the shoulders, the back, the extensor surfaces of the extremities — in nearly one-half of my cases — would lead us to think of possible vestigial deep pigmentation in any location where epidermal pigment is normally most abundant, following a general law in both man and monkeys that epidermal and corium pigment is found more or less in the same proportion (Adachi). We know, too, that as a general law corium pigment is more abundant on the trunk than on the extremities (Adachi). One naturally thinks of a possible persistent ancestral tendency to deeper pigmentation in the sacral and adjoining regions, as for example in certain

baboons, notably the mandrill, although at present there is no further evidence to support this view.

We can no longer consider these spots as exclusive race characteristics. They are to be accorded the same value as other racial traits — color, hair, features, etc. Their presence or absence in given cases leads to highly probable but not positive determination as to race or to degree of contamination. This is of especial interest to us in this country.

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VIRGINIA — FROM EARLY RECORDS

By DAVID I. BUSHNELL, Jr

Introduction

During the last summer the writer examined many volumes of manuscripts in the British Museum, London, and in the Bodleian Library, Oxford, searching for material relating to the Indians of Virginia during the early days of the colony. Many documents of historical interest were found, but only a small number contain references to the native inhabitants. Although these notes may refer to events already recorded in the history of the colony, they nevertheless should prove of interest as they shed additional light on certain passages in the writings of John Smith, Strachey, and other early historians of the colony.

The numerous place-names appearing in two of the manuscripts should be of special interest at the present time, for by these names the streams and villages were known to the Indians at the time of the founding of Jamestown, the three hundredth anniversary of which event is about to be celebrated.

I — Fragments from the Early Records

When the colonists reached the shores of Virginia, during the month of May in the year 1607, they found the country to be comparatively thickly settled, many small villages being scattered along the coast and through the numerous river valleys. These villages or settlements to the number of about two hundred, of which about thirty were "kings' houses," formed a sort of league, of which Powhatan, who was destined to play such a prominent part in the early history of Jamestown, was the recognized leader. Concerning this, Strachey[1] wrote:

> The great king Powhatan hath devided his countrey into many provinces or shires (as y^{t} were), and over every one placed a severall absolute weroance or comaunder . . .

[1] William Strachey, *The Historie of Travaile into Virginia Britannia*, Hakluyt Society Publications, London, 1849, p. 55.

Powhatan died some time during the spring of 1618, and "*Itopatin* his second brother succeeds him, and both he and *Opechankanough* have confirmed our former league."[1] But the friendship of the latter was of short duration, as was shown by his actions on that fateful day, March 22, 1622, when some three hundred and fifty settlers in various parts of the colony were massacred. These deeds and the success attending the plans for the massacre probably elevated him in the opinion of his savage followers and he continued as the acknowledged head of the confederacy.

A document among the manuscripts in the British Museum[2] contains an interesting though brief reference to the native government at that time:

That parte of Virginia wthin w^{ch} we are seated and fitt to bee settled on for many hundred yards. It is within y^{e} Territories of *Opiehakano*, it lyeth on the west side of Chesapiocke baye, which comandeth from the southermost parte of y^{e} fourth river called *Potomeck* w^{ch} lyeth north next hand to y^{e} River some 50 leagues in Latitude. In longitude it extendeth to the *Monakins* countrie next hand west and west and by North of equall length with the latitude. his owne principall state is in y^{e} seacond River called *Pamunkey* in the heart of his own inhabited territories. This revolted Indian King with his squaw comaundeth 32 Kingdomes under him. Everye Kingdome contayneinge y^{e} quantitie of one of y^{e} shires here in England. Eavery such Kingdome hath one speciall Towne seated upon one of y^{e} three greate Rivers with sufficience of cleared ground for y^{e} plowe & bravely accomadated for fishing . . .

This document, which is quite extended but contains no other notes on the Indians, is signed "Tho. Martin" and bears the date "15th of Dec. 1622"—the year of the massacre. Among the "names of the 'Adventurers for Virginia,'" published in 1620, is one Thomas Martin, who was probably the author of the above-mentioned document.

The "one speciall towne" of "eavery such Kingdome" was probably similar to either *Pomeiock* or *Secoton* as they were some twenty years before Jamestown was settled.

[1] John Smith, *The Generall Historie of Virginia*, 1624, p. 125. Note. — All references to Smith's writings made in this article refer to The English Scholar's Library reprint, Birmingham, 1884.

[2] MS. vol. 12496, fol. 456.



THE TOWNE OF POMEIOCK"

(From White's Original Drawing, now in the British Museum)



SECOTON

(From White's Original Drawing, now in the British Museum)

The original colored drawings made by John White during his visit to Virginia in 1585 as a member of the first expedition sent out by Sir Walter Raleigh, are preserved in the British Museum. "The towne of Pomeiooc" (Pomeiock) was engraved by De Bry and used as plate XIX in Hariot's *Virginia*, while the view of "Secota" (Secoton) appears as plate XX in the same work. Plates II and III of the present article, however, are reproduced from photographs, made by the writer, of the original drawings.

Some villages were evidently palisaded, others were more open and unprotected. The habitations were mat or bark-covered wigwams, types even now met with among the Ojibwa and other Algonquian tribes.

Soon after the settlement of Jamestown, the English colonists came in contact with the Indians occupying the country to the north, the west, and the south of them. But while those whose villages were far south of James river were not within the bounds of the present state of Virginia, reference to them should not be omitted, as they certainly exerted a direct influence on the welfare of the colony.

A note in an old volume in the Bodleian Library, Oxford, reads thus:

15 Maii 1609 on Monday in the morning our 6 shippes lying at Blacke wall wayed Anker and fell downe to beginne ther Viage toward Virginia, Sir Thos. Gates being the deputy Governour untill the L^d^ Delaware dooth comme theather which is supposed shal be 2 monthes. Captayne Newport Captayne S^r^ Georg Sommers and 800 people of all sortes went in those 6 shippes besydes 2 moare that attend the fleete at Plymouth and ther be inhabitantes allready at Virginia about 160. God blesse them and guide them to his glory and and our goode. Amen.[1]

Before leaving England Gates received full instructions from the Government. Fortunately these instructions contained many interesting references to the Indians and the policy to be pursued in treating with them. Although the document given to Gates may no longer exist, a contemporary copy of it is preserved in the British Museum,[2] from which the following extracts have been copied:

[1] MS. Tanneri, CLXVIII, fol. 2.

[2] MS. vol. 21993, fol. 178 et seq.

INSTRUCTIONS, ORDERS AND CONSTITUTIONS BY WAY OF ADVISE SET DOWNE, DECLARED AND PROPOUNDED TO SIR THO. GATES, KNIGHT GOVERNOUR OF VIRGINIA

[As to making settlements:]

Above the river falls, of the Kings river it is likely you shal find some convoenient place to this purpose, whither noe enemy with ease can approach . . . besides you shall have the commodity of the branches of the rivers to bringe downe your provisions from with the lands in canoes and small boates in the river of *Chechehommack*, neere unto you and not farr of[f] another navagable outlett into the sea by the river of *Pamouke*.

Four dayes Journey from your forte Southerward is a town called *Ohonahorne* seated where the river *Choanock* divideth itself into three branches and falleth into the sea of *Rawnocke* in thirty five degrees. This place if you goe by Indian guides from Jame's forte to *Winocke* by water, from thence to *Manqueock* some seventy myles from thence to the *Cuhthoga*, as much and from thence to *Oconahoen* you shall finde abundance fruitfull seat, everyway unacessable by a strainger enemy, much more abundant in *Pochon*[1] and in the grasse silke. . .

If you make your principall and choise seate you shall doe most safely and richly because you are in the heart of Lands [? open] to the south and two of the best rivers will supply you, besides you are neare to with Copper mines of *Ritanoe* and may passe them by one branch of this river, and by another *Peccarecamicke* where you shall finde four of the Englishe alsoe, lost by S[r] Walter Raweley, which escaped from the slaughter of *Powhatan* of *Roanocke* upon the first arivall of our Colony and live under the protection of a *wiroano* call'd *Sepanocon* enemy to *Powhatan* by whose consent you shall never receive them, one of these were worth much laboar and if you finde them not, yet search into this countrey it is more probable than towardes the North.

.

For Powhatan and his *Weroances* it is cleere seem to reason, besides our experiences, that hee loved not our neighboorhood and theirfore you may noe way trust him, but if you finde it not best to make him your Prisoner yet you must make him your tributory and all other his *wero-*

[1] The blood-root (*Sanguinaria canadensis*), still called puccoon in western North Carolina and southwestern Virginia. It was used for staining the face. See references to this root in the articles by Mr Willoughby and Mr Gerard, following.

ances about him first to acknowledg noe other Lord but King James and soe wee shall free them all from the Teranny of Powhatan.

.

If you make friendship with any of thiese nations as you must doe, choose to do it with those that are farthest from you & enemies unto those amongst whome you dwell for you shall have least occasion to have differences with them, and by that means a surer league of amity. And you shalbe surer of their trade partly for covetousness and to serve their owne ends, where the copper is yet in his. primary estimation which Pohatan hath hitherto engrossed and partly for feare of contraint, *Monocon* to the east head of our river, Powhatans enemy and the *Manahockes* to the northeast to the head of the river *Moyomps*. in the necke of, to the west, between our bay and the sea *Cathcataprius* a great[er] *weroance*, than hee is, also his enemy, to the Southeast and south he hath noe friends. to the North the *Masawoymeles* make incoursions upon him and upon all those that inhabite rivers of *Bolus* and *Moyomps* and to the northwest part *Coughtuwonough* infesteth him with a terribl warr . . . to the North at the head of the Bay is a lardge towne where is store of Copp[er] and ffurs called *Cataanron* that trade and discovery will be to great purpose if it may be settled yearely.

The instructions delivered to Lord De la Ware when he went, as governor, to Virginia, contained only a brief reference to the Indians. The following extract is taken from a contemporary copy of the instructions preserved in the British Museum :[1]

It is verry expedient that your Lord^{shp} with all dilligence endeavor the Conversion of the natives and savåges to the knowledge and worship of the true God and their redeemer Christ Jesus as the most pius and noble end of this plantation, w^{ch} the better to effect you and to procure from them some of their Children to be brought up in our language and manners and if you think it Convenient we think it necessary you first remove from them *Quiocosccks* or preists by a surprise of them and detayning them prisoners and in case they shall be wilful abstinate, then to send us some 3 or 4 of them unto England, we may endeavor their conversion here. . .

On the tenth of May, 1611, Sir Thomas Dale arrived in Virginia as governor of the colony. Soon after his arrival he set out with

[1] MS. vol. 21993, fol. 187.

one hundred men to explore the country about the "River of *Nansamund*, in despight of the Indians then our enemies; then our owne River to the Fal[l]es, where upon a high land, invironed with the maine River, some twelve miles from the Fal[l]es, by *Arsahattock*, he resolved to plant his new towne."[1]

The Reverend Alexander Whitaker, the author of the several reports and communication published in London in 1613 under the title *Good Newes from Virginia*, probably accompanied Sir Thomas Dale on his expedition, as a letter written by him soon after their return to Jamestown, and now preserved in the British Museum,[2] contains several interesting passages relating to the actions of the Indians at that time:

Good Mr Crashaw you heard by my last two how prosperous a journey I had hither and must now again send you words how God hath continued his goodness to wards mee and preserved me safe hitherto with great hope of good success to our purpose.

It is needless that I should write unto you of every particular of our doeings . . . but I will acquaint you with one thinge which may be worth your consideration and wherein I desire to know your opinions.

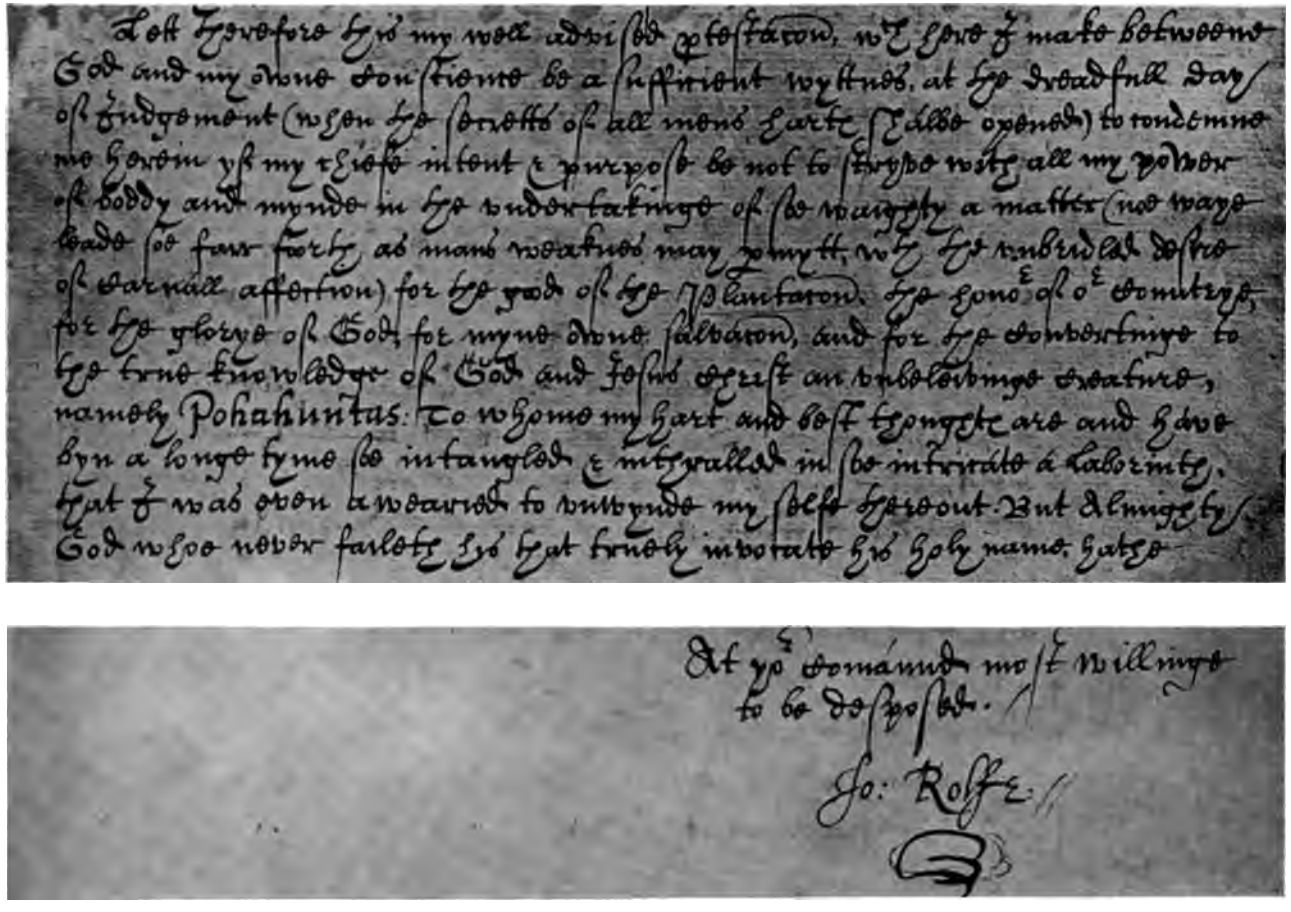
Our governour, Sir Thomas Dale pretended an expedition to a place call'd the fals, 7 or 8 dayes before his going the king of the Indians, *Powhaton* by his Messengers forbidds him those quarters and demaindes of them 2 Indian Prisoners which hee had taken of them otherwise he threatened to destroy us after a strange manner. First hee said hee would make us dumbe and then kill us and for a mere solemnity gave us six or seaven dayes respite. Sir Thomas was very merry at this message and returned them with the like answer.

Shortly after without any deliverance of the prisonors hee went armed to the falls, where one night our men being att praiers in the Court of guard, a strainge noise was heard comeing out of the Corne towards the trenches of our men, like an Indian hup hup[th] ann Oho Oho, some say that they saw one like an Indian leape over the fire and runne into the corne with the same noyse. All the while all our men were confusedly amazed. They could speake nothing but Oho Oho, and all generally takeing the wronge endes of their armes beganne the Thebans warre against Cadmus.

But (thankes be to God) this alarum lasted not above half a quarter

[1] Smith, *Generall Historie*, p. 110.

[2] MS. vol. 21993, fol. 193.



Lett therefore yͤ my well advised protestacon, wᵗ yͤ I make betweene God and my owne conscience to be a sufficient wytnes, at yͤ dreadfull day of Judgement (when yͤ secrets of all mens harts shalbe opened) to condemne me herein yͤ my chiefe intent & purpose be not to strive with all my power of body and mynde in yͤ undertakinge of so waighty a matter (not waye bended soe farr forth as mans weakned may permytt, wᵗ yͤ inbredd desire of carnall affection) for yͤ good of yͤ Plantacon. yͤ glorye of God, for myne owne salvacon, and for yͤ conversinge to yͤ true knowledge of God and Jesus Christ an unbeleevinge creature, namely Pohahuntas. to whome my hart and best thoughts are and have bin a longe tyme soe intangled & inthralled in soe intricate a labirinth, that I was even a wearied to unwynde my selfe therout. But Almighty God who never forsakes yͤ that truely invocate his holy name, hathe

Att yͤ commaund most willinge to be disposed.

Jo: Rolfe

PETITION OF JOHN ROLFE FOR PERMISSION TO MARRY POCAHONTAS

MS. Ashmolean 830, Fol. 118. 19, Bodleian Library, Oxford. Exact Size

of an hower and noe harme was donne excepting 2 or 3 which were knockt downe without any further harme: for suddenly as men aroused out of a dreame they begainn to search for their supposed enemyee, but finding none remayned ever after verry quiet.

An other accident fell out in a march up *Nan sam und* river, as our men pass'd by one of Their Townes, their yssued out of the shoare a mad crew dantsinge like Anticks as our Morris Dansers before whome their went a *Quiockosite* (or their Preist) to send smoake and flame out of a thing like a Censer. An Indian (by name) *Munchumps* amongst our men seeing this dance toulde us that there would be verry much raine within 5 miles and so further of[f] but not so much there as made their powder dancke. Many such Casualtys happen as that the principall amongst them being bound with stronge lyne and kept with great watch have escaped from us [with]out our knowledge or prevention. All which things make me thinke that theire bee great watches amonge them and they [are] verry familliar with the Devill . . .

Your Loveing Freind
Allexander Whitaker

James Towne in Virginia this
9th of August, 1611

The Indian Munchumps mentioned in this letter was in all probability "*Machumps* who — so wrote Strachey— was somtyme in England, and comes to and fro amongst us as he dares, and as Powhatan gives him leave." [1]

Evidently the country above the falls beyond the bounds of the Powhatan confederacy was considered by the Indian and the colonist alike as a separate and distinct land. A letter written by George Yardly to Sir Henry Payton in London, and dated "James town, this XVIII of November 1610," [2] refers to an expedition planned by the Governor who intended going "up unto a famous fall or cataract of waters, where leaving his pinnasses & Boates safe riding, so purposely to loade up go into the Land called the Monscane."

Another manuscript in the Bodleian Library [3] remains to be considered. Any article on the early days of Virginia would not be complete without some reference to the daughter of Powhatan, and

[1] Strachey, p. 54.
[2] Bodleian Library, Oxford, MS. Eng. Hist., C. 4, fol. 3.
[3] MS. Ashmolean 830, fol. 118-119.

the document in question is the petition written and signed by John Rolfe and presented to Governor Thomas Dale asking permission to marry "Pohahuntas." A fragment of the document is reproduced in plate IV and reads thus:

Lett therefore this my well advised prostacon [protestation], w^ch^ here I make betweene God and my owne conscience be a sufficient wyttnes, at the dreadfull day of Judgement (when the secretts of all mens harts shalbe opened) to condemne me herein yf my chiefe intent & purpose be not to stryve with all my power of boddy and mynde in the undertakinge of soe waighty a matter (noe waye leade soe farr forth as mans weaknes may smytt, w^th^ the unbridled desire of carnall affection) for the good of the Plantacon, the hono^r^ of o^r^ comiteye, for the glorye of God, for myne owne salvacon, and for the convertinge to the true knowledge of God and Jesus christ an unbeleivinge creature, namely Pohahuntas: To whome my hart and best thoughts are and have byn a longe tyme soe intangled & inthralled in soe intricate a Laborinth, that I was even awearied to unwynde myselfe thereout.

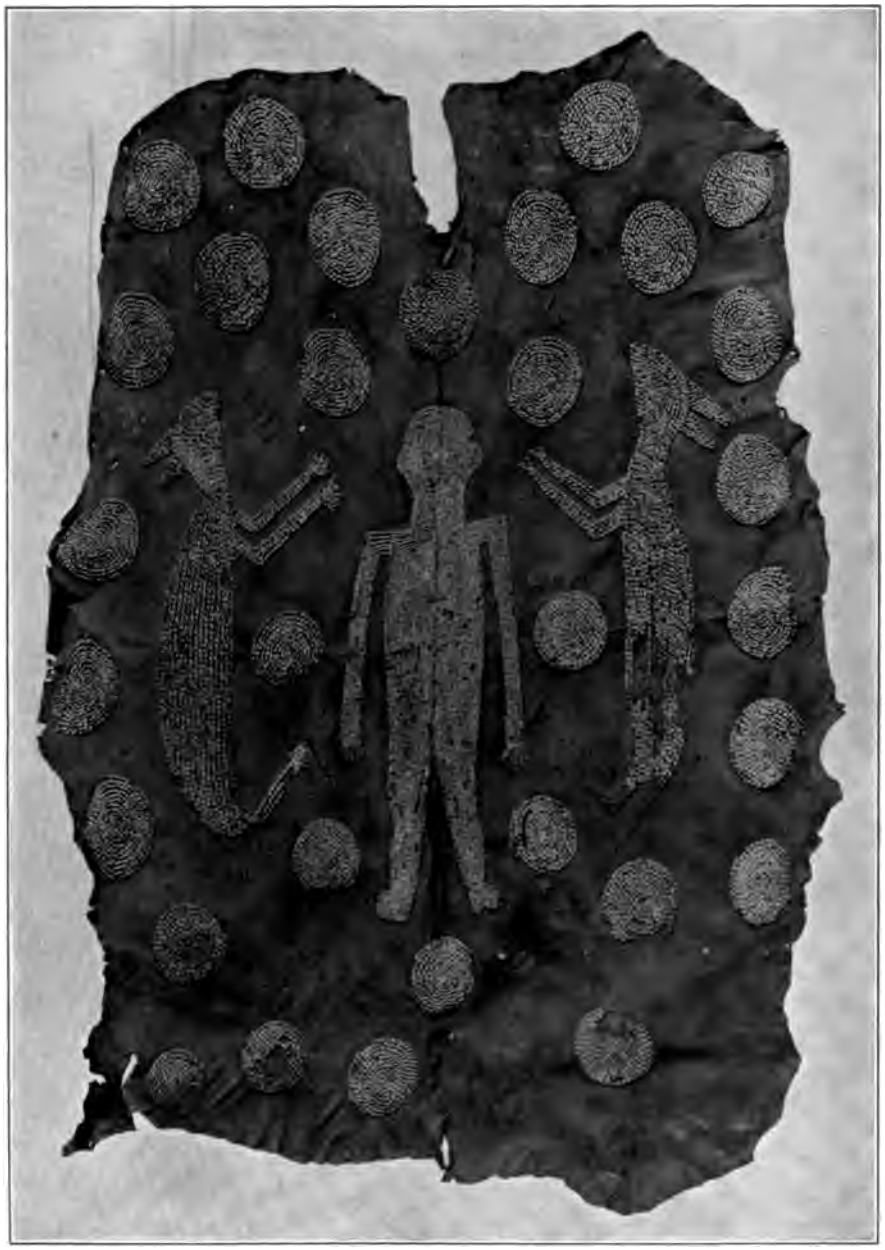
The spelling of the name *Pohahuntas* — and Rolfe undoubtedly wrote it as he pronounced it — differs slightly from Strachey's *Pochahuntas* and Smith's *Pocahuntas*.

II — Ethnological Specimens from Virginia

In the small catalogue of the "Museum Tradescantianum," published in London in 1656, appear the following references to material from Virginia:

[p. 45] Bows; Arrows; Quivers; Darts — Virginia.
[p. 47] A Virginian habit of Beares-skin.
A Match-coat from Virginia: Feathers-Deer-skin.
Pohatan, King of Virginia's habit all embroidered with shells, or Roanoke.
A Match-coat of Virginia made of Racoune-Skins
[p. 51] Virginian purses imbroidered with Roanoake
[p. 53] Tobacco-pipes from Virginia.

John Tradescant, by whom the original collection was begun, died about the year 1638, and the objects were inherited by his son. In 1659 the collection became the property of Elias Ashmole, who, some twenty years later, presented it to Oxford University. Five of the specimens from Virginia have survived to the present day and



"POHATAN, KING OF VIRGINIA'S HABIT"
(In the Ashmolean Museum, Oxford)

are kept in the Ashmolean Museum. Unfortunately, however, these and several other specimens belonging to the same collection are neither cared for nor properly preserved, being retained merely as specimens belonging to the original Tradescant collection. A few years more and several pieces will have become lost for the want of proper care — a condition of affairs difficult to realize, but nevertheless true.

The five existing pieces from Virginia include the "habit" attributed to Powhatan, a purse or bag of unusual form, and three bows.

The most interesting and unusual of these is "*Pohatan's* habit" (pl. v). It is formed of four pieces of tanned buckskin, having an extreme length of 2.33 meters and a width of 1.5 meters. This has already been figured and described by Dr E. B. Tylor,[1] but in the colored plate much of the detail is lost which shows to better advantage in a direct photograph.

The decoration — the signification of which is not known — is formed of small sea-shells (*Marginella nivosa*) perforated and attached by means of a fine thread of sinew. The shells forming the human figures in the center were first ground at one end, reducing them to scarcely half their natural size.

Of the "Virginian purses imbroidered with Roanoake" only one example remains. This is now, for the first time, figured (pl. vi) and described. The extreme length is 780 mm., but the bag proper, which is formed of a piece of tanned buckskin, is only 290 mm. in length, and 90 mm. in width at the lower or closed end, across which extend two parallel rows of small shells (*Marginella nivosa*), prepared as were the shells forming the human figures on the "habit." The upper or open end of the pouch is a trifle wider, measuring 100 mm. Extending from each side of the top or opening of the bag proper is a piece of beadwork composed of small shell beads of varying thickness, but being rather uniform in diameter and measuring about 3.3 mm. The perforations are conical in form, evidence of the use of a primitive drill, probably stone-pointed. The beads were strung after the manner of wampum

[1] *Internationales Archiv fur Ethnographie*, Bd. I, 1888, p. 215–217, plate XX.

belts, that is, between the rows of beads extend narrow strips of tanned skin; through each bead pass two threads of sinew, one of which goes on either side of the intervening piece of skin. Two similar pieces of beadwork extend from the lower or closed end. Narrow strips of skin extend from the extreme ends, on each of which is placed one large shell bead having a biconical perforation.

These large beads correspond to the larger beads represented in many of White's drawings. Several of the smaller beads (unfortunately they do not show in the photograph) have a length much greater than their diameter and are therefore similar to the true wampum. The piece of work should be accepted as additional proof of the prehistoric origin of wampum.[1]

This unique object is of great interest, as it is, without doubt, the oldest existing example of beadwork ornamentation made by the North American Indians.

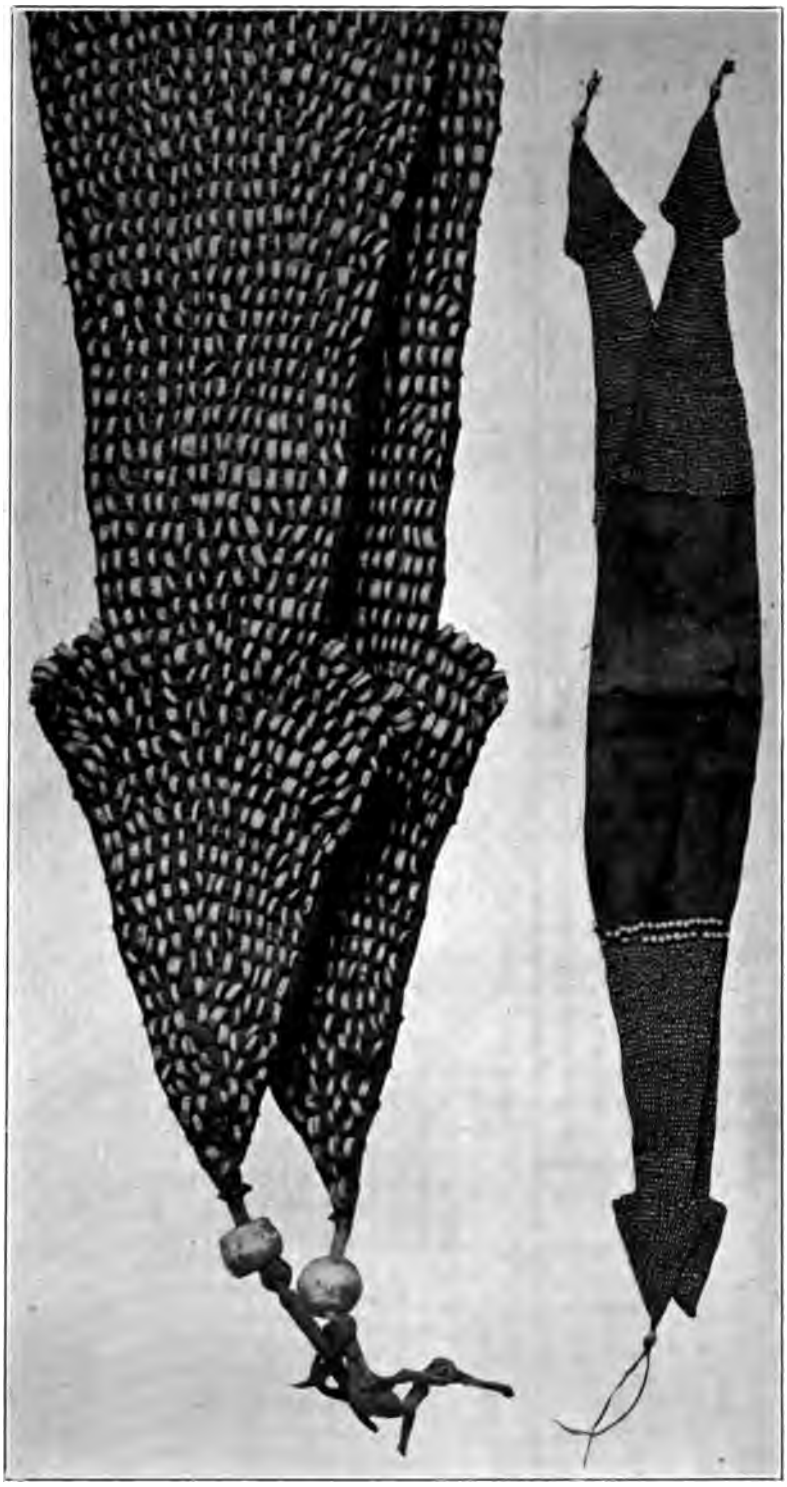
The three bows from Virginia, now in the Ashmolean Museum, are shown in plate VII, together with a drawing, made by White in the year 1585, representing an Indian with a similar weapon. The dimensions of these specimens are:

	Length.	*Greatest Width.*	*Greatest Thickness.*
A	1740 mm.	42 mm.	17 mm.
B	1580 mm.	40 mm.	20 mm.
C	1695 mm.	40 mm.	20 mm.

All three specimens appear to have been much used and have attained a high polish. The wood of which they are made resembles ash, but has not been identified conclusively. These bows closely resemble the one now in the Peabody Museum, Harvard University, which is known to have been used by an Indian near Plymouth, Massachusetts, about the year 1667.

These five pieces were probably brought from Virginia soon after the settlement of Jamestown, consequently they are true examples of the primitive art of the southern Algonquian tribes. By Dr Tylor the Powhatan mantle is supposed to have been brought back by Captain Smith himself, and in his article on the subject presents some interesting evidence tending to verify his belief.

[1] The Origin of Wampum, *Journal of the Anthropological Institute*, 1906, p. 172.



"VIRGINIAN PURSE" IN THE ASHMOLEAN MUSEUM, OXFORD
(The left-hand figure shows the detail, full size)

Other pieces of equal interest may be in the possession of private persons in England, but if so, they are not known.

III — The Indians of Virginia in 1687

The notes presented in the preceding pages deal with the Virginia Indians during the early years of the colony, but another document treating of a later generation and containing references of equal interest is preserved in the British Museum (MS. add. 4437), together with various other papers once belonging to the Royal Society.

The document is not given here in full, only the more interesting parts having been copied.

A letter from The Rev. Mr John Clayton, afterwards Dean of Kildare in Ireland to Dr Gren in answer to several qurys sent to him . . . A. D. 1687. Communicated . . . to John, Earl of Egmont, F. R. S.

I have observed many gross mistakes in peoples notions of Virginia when discoursing of the Natives, which have arisen from the want of making a distinction in their Expressions when they speak of the English or White born there and so called *Natives* & the Aborignes of the Country; Please therefore to take notice that when I speak of the natives in general that I mean only the Indians.

And therefore to your first query.

Their *Wiochist*, that is, their Preist is generally their Physician and is a person of the greatest honor and esteem among them next to the King and to thier great War-Captain

2. Nature is their great Apothecary; each Physician furnishes himself according to his skill with herbs or the leaves, fruit, roots or barks of trees of which he sometimes makes use of the Juice & sometimes reduces them into Powder or perhaps makes a decoction thereof.

3. Though everyone according to his skill is a sort of Doctor (as many women are in England) yet their Preist is peculiarly stiled their Physician to be consulted upon greater emergencys. The rules of the descent hereof as to familys I do not know for they are sullen close people and will answer very few questions.

4 They reward their Physicians with certain fees, but according as they bargain for wampam peake, skins or the like; if it be to an Englishman they are sent for they will agree for a match coat or a gallon or two of Rum or so forth according to the nature of the cure. Sometimes the

Preist will sell his remedy for some of them have told me that they have bought the root which cures the bite of the Rattle snake, from their *Wiochist.*

5 The King allows no sallary that ever I heard of, but every one that in any nature can serve his Prince, is ready to do it, and to do it gratis

6 They have no consultations, their practice being merely Emperical. They know little of the nature or reason of things. . .

7. They pay a certain deference of honour to their Preist or *Wiochist,* whose person they hold sacred. But laws they have none (as far as I could ever learn) that bind them thereto; in general the will of their Prince stands for reason and Law.

8. The means whereby they convey their art to Posterity I take to be this. They lodge in their *Wiochisar* houses, i. e. their Temples certain kind of riliques, such as mens skulls, some containing grains or pulp & several herbs which are dedicated to their Gods, viz, the skulls in memory of their fights and conquests. The pulp by way of thank offering for their provision, and the Herbs upon the same account for some special cure performed thereby. For when anyone is cured by any herb he brings part thereof and offers it to his God, whereby the remembrance of this herb and its virture is not only preserved, But the rest also becomes best instructed thereby and knowing in the art of medicine. For otherwise they are mighty reserved of their knowledge some among themselves. Whether the preist takes certain persons to instruct or teaches only his own children I know not. Often when they are abroad hunting in the woods and fall sick or come by any hurt, they then are forced to make use of any herbs which are nearest at hand which they are not timorous in venturing upon though they know not the virture or quality, thereof, and thus by making many trials and experiments they find out the virturs of Herbs and by using simple remedys they certainly know which it is that effects the cure.

9. They are generally most famed for curing of wounds and have indeed various very good wound-herbs as an herb commonly called "*Indian-weed*" which perhaps may be referred to the valerians and be said to be *Platain foliis.* They use also the *Grafalium Americanum* commonly called the white Plantain. As to our Plantain or the *Heptapleuron* they call it the "*Englishman's foot*" and have a tradition that it will only grow where they have troden, and was never know before the English came into this countrey. The most famous old Physician among the *Apomatick Indians* as I was informed by a person of very good understanding, used mostly an herb whose leaf is much like *Jelf heal* in winter.



(LEFT) THREE BOWS FROM VIRGINIA IN THE ASHMOLEAN MUSEUM, OXFORD
(RIGHT) DRAWING MADE BY JOHN WHITE IN 1585

I observed it was red underneath and would at length appear tinged on the upper side also, it make a good salve. . . .

13. There [are] traditions of their having an art to poison their darts, but I could never find any solid ground for that report. . . Some herbs there are of an analogous nature with Hemlock whereof I think they know nothing further than that they are to avoid them. But any herbs where with they poison their darts I never could hear specify'd. . .

14. As to their morals they are simple & credulous rather honest than otherwise and unpractised in the European arts of lying and dissimulation ; but in the brutal passion they are as sensual as the beast of the field

15. They are almost allways either eating or sleeping unless when they go a Hunting. at all hours of the night whenever they awake they go to the *Hominy pot*, that is, Maze dressed in a manner like our pilled wheat or else a piece of Venison barbecured, that is wrapped up in leaves and roasted in the Embers.

16. They drink I think little besides *Succaharrah*, that is fair water, unless they can gett spirits, such as Rum from the English . . . but do not much care for them unless they can have enough to make them drunk.

17. They use tobacco much which they smoak in short pipes of their own making having excellent clay. . . They make also neat pots of the same clay which will endure the fire for any common uses.

18. They have no Opium though in some old fields upon York River I found Poppys perhaps of no dispisable virture. I have been told that in feavers and where their sick cannot sleep they apply the flowers of *Strammonium* to the Temples which has the effect of Laudanum. . .

19. Their sports are dancing, their games are playing with straws which as I am not perfectly acquainted with I find it hard to describe. I can therefore only tell you how it appears to a lookeron. They take a certain number of straws & spread them in their hands holding them as if they were cards, then they close them and spread them again and turn them very suddenly and seem very dexterous thereat. Their Exercise is hunting that is shooting with a gun or with Bow & arrow wherein they excel.

Their women work, plant the corn and weave baskets and matts.

21. I have been told that one of their famous *Wiochists* prophecyed that bearded men (for American Indians have no beards) should come and take away their country & that there should none of the original Indians be left within a certain number of years, I think it was an hundred & fifty. This is very certain that the Indian inhabitants of Virginia are now very inconsiderable as to their numbers and seem insensibly to

decay though they live under the English protection and have no violence offered them. The are undoubtedly no great breeders.

22. Though they are sluggish by nature and slow of speech yet their method of expression seems vehement & emphical & allways atended with long gesticulations

They are generally well proportioned, for the most part are rather taller than the English, They have all either a very dark brown hair, that may well be called black; or a jet black. all lank.

The Reverend Mr Clayton, by whom the above letter was written, sent other communications to the Royal Society, all pertaining to Virginia. These were published in the several editions of a work entitled "*Miscellanea Curiosa Containing a Collection of Curious Travels, Voyages and Natural Histories of Countries, as they have been Delivered in to the Royal Society*" (Second ed., London, 1727), and include discussions on (1) The air; (2) Further observations in Virginia; (3) The soil; (4) continuation of the same; (5) The beasts of Virginia. Evidently the letter on the Indians was never printed; it is therefore now presented for the first time.

As has already been stated, many documents relating to the early history of Virginia were found among the manuscripts in the British Museum and in the Bodleian Library at Oxford; but references to the Indians rarely occur. The most interesting of these are now copied in the preceding pages and should prove of interest at the present time.

LONDON,
ENGLAND.



FIG. 1. — Raleigh seal in the British Museum ($\frac{1}{2}$).

DISCOVERIES BEYOND THE APPALACHIAN MOUNTAINS IN SEPTEMBER, 1671

By DAVID I. BUSHNELL, Jr

The writer has recently found in the British Museum a manuscript journal of a trip over the mountains from Virginia, made during the autumn of the year 1671. This journal is of special interest, as it is the earliest record of the crossing of the Appalachians by Europeans. The manuscript is included with many others in volume 4432, entitled "Papers Relating to the Royal Society."[1]

It is true that during the years 1669 and 1670 John Lederer made three short journeys to the westward of the then settled parts of Virginia, traveling as far as the summit of the mountains; but it is evident he did not descend the western slope.[2] The following year, however, a party of Englishmen, with Indian guides, pushed westward until they found the waters flowing in a westerly course, showing them to have crossed the natural divide.

This expedition took formal possession of the newly discovered

[1] A transcript of this journal, somewhat condensed, written in the third person, and varying in many essential details from the manuscript here printed, appears in *Documents Relative to the Colonial History of the State of New York*, vol. III, pp. 193–7, New York, 1853, under the title: "The Journal & Relation of a New Discovery made behind the Apuleian Mountains to the West of Virginia." The author of the journal is Arthur Fallows (spelled Fallam in the printed copy), a member of the expedition, as will appear by reference to the entry under date of September 14 in the two accounts, the personal pronoun being employed by the author in the original, and "Mr Fallam," in the transcript. There is a brief account of their tour in Beverley's *History of Virginia* (London, 1705, bk. I, p. 64), in which the leader of the party is called "Captain Henry Batt"; and Mr James Mooney makes use of the journal, as printed in the New York Colonial Documents, in his *Siouan Tribes of the East* (Bulletin of the Bureau of Ethnology, Washington, 1894). In the following notes, for all of which the Editor alone is responsible, attention is called to the more important variations in the two versions by quotations from the previously printed copy. — Editor.

[2] *The Discoveries of John Lederer, in Three Several Marches from Virginia to the West of Carolina, and other parts of the Continent, Begun in March, 1669, and ended in September, 1670.* London, 1672; reprinted, Rochester, N. Y., 1902. For comments on the authenticity of parts of Lederer's narrative, see Thomas in *American Anthropologist*, V, 724–7, 1903.

lands in the name of King Charles II, as is set forth in the following journal, which is copied in full:

A JOURNAL FROM VIRGINIA, BEYOND THE APAILACHIAN MOUNTAINS, IN SEPT. 1671. SENT TO THE ROYAL SOCIETY BY M^R CLAYTON,[1] AND READ AUG. 1. 1688, BEFORE THE SAID SOCIETY. —

Thomas Batts, Thomas Woods and Robert Fallows having received a commission from the hon^bl Major General Wood for the finding out the ebbing & flowing of the Waters on the other side of the Mountains in order to the discovery of the South Sea accompanied with *Penecute*[2] a great man of the *Apomatack* Indians[3] & Jack Weason,[4] formerly a servant to Major General Wood with five horses set forward from the Apomatacks town about eight of the clock in the morning, being Friday Sept. 1. 1671. That day we traveled above 40 miles, took up our quarters & found that we had travel'd from the *Okenechee* path due West.[5]

Sept. 2. we traveled about 45 miles and came to our quarters at Sun set & found we were to the north of the West.

Sept. 3. we traveled west and by south and about three o'clock came to a great swamp a mile and a half or two miles over and very difficult to pass. we led our horses thro' & waded twice over a River emptying itself in Roanoake River.[6] After we were over we went northwest & so came round & took up our quarters west. This day we traveled 40 miles good.

Sept. 4. We set forward and about two of the clock arriv'd at the *Sapiny* Indian Town.[7] We travelled south & by west course till about even

[1] See the previous communication from "The Rev. Mr John Clayton, afterwards Dean of Kildare in Ireland," on page 41.

[2] "Perecute" throughout the printed copy in the *Doc. Col. Hist. N. Y.*

[3] One of the tribes of the Powhatan confederacy of Virginia, formerly living on lower Appomatox river. Their principal village, which bore the same name and which was burned by the English in 1611, was situated on the site of Bermuda Hundred, Prince George county. In Captain John Smith's time the tribe numbered 60 warriors, or about 200 people, but it was extinct by 1722. The name signifies "river-bend" according to Gerard (*Am. Anthrop.*, VII, 223, 1905), "resting tree" according to Tooker (ibid., VI, 673, 1904).

[4] *Nesan* in the printed copy. See note 1, p. 52.

[5] "This path led from Petersburgh, Virginia, to Augusta, Georgia. It is laid down on *Mitchell's Map*, London, 1755" (*Doc. Col. Hist. N. Y.*, III, 193, note; see also Mitchell's letter following this journal). Mooney (op. cit., pp. 35–38) locates the Occaneechi village, in 1675, at about the site of Clarksville, Mecklenburg county, southern Virginia. See Lawson, *History of Carolina*, London, 1714.

[6] Staunton river. Compare the letter of Dr John Mitchell, following.

[7] "Sapong [for Sapony] Town" in the printed copy. This village is located by Mooney (pp. 30, 35) on Otter river, southwest of Lynchburg, in Campbell county. The printed narrative continues: "They traveled S. and by W. course till about noon", etc.

[ing] and came to the *Saponys* west. Here we were very joyfully & kindly received with firing of guns & plenty of provisions. We here hired a Sepiny Indian to be our guide towards the *Teteras*,[1] a nearer way than usual.

Sept. 5. Just as we were ready to take horse and march from the *Sapiny's*[2] about seven of the clock in the morning we heard some guns go off from the other side of the River. They were siven Apomatack Indians sent by Major General Wood[3] to accompany us in our Voyage. We hence sent back a horse belonging to Mr Thomas Wood, which was tired, by a Portugal, belonging to Maj. General Wood, whom we here found.[4] About eleven of the clock we set forward and that night came to the town of the *Hanathaskies*[5] which we judge to be 25 miles from the *Sapenys*, they are lying west and by north in an Island on the *Sapony* River, rich Land.

Sept. 6. About 11 of the clock we set forward from the *Hanathaskies*; but left Mr Thomas Wood at the town dangerously sick of the Flux, & the horse he rode on belonging to Major General Wood was likewise taken with the staggers & a failing in his hinder parts. Our course was this day West and by South and we took up our quarters West about 20 miles from the town.[6] This afternoon our horses stray'd away about ten of the clock.

Sept. 7. We set forward, about three of the clock we had sight of the mountains, we travelled 25 miles over very hilly and stony Ground our course westerly.

Sept. 8. We set out by sunrise and Travelled all day a west and by north course. About one of the clock we came to a Tree mark'd in the

[1] The last two names are given respectively as "Sapong" and "Totera" in the printed copy. The latter were the Tutelo. See note 5, p. 48.

[2] This name is not repeated in the printed copy.

[3] Wood's name is not here mentioned in the printed copy.

[4] The printed copy reads: ". . . they were 7 Apomatock Indians sent to accompany them in their Travels, one of their horses being tired they sent him back, . . ."

[5] "Hanohaskie Indian Town" in the printed copy. The sentence continues: "25 miles from the Sapongs, where they were likewise kindly entertained, the town lyes W. and by N. in an Island of the Sapong River Richland." Mooney (p. 34) believes this to be a mistake for Manohaski, and identifies it with the Monahassanugh of Capt. John Smith's map, "on which they are located indefinitely southwest of the junction of the James and the Rivanna." Mooney locates the Hanohaski (Hanathaskies) town of the present narrative on the northern ("Sapong" or "Sapinys") branch of Staunton river, in the present Bedford county, Virginia.

[6] The printed copy reads: ". . . 20 miles from the Town, this afternoon ye Indians killed them a dear, in the night 2 of their horses straied away from ym about 10 of the clock."

past[1] with a coal M. A N I. About four of the clock we came to the foot of the first mountain went to the top & then came to a small descent, & so did rise again & then till we came almost to the bottom was a very steep descent. We travelled all day over very stony, rocky ground and after 30 miles travill this day we came to our quarters at the foot of the mountains[2] due west. We past the *Sapony* River twice this day.

Sept. 9. We were stirring with the Sun & travelled west & after a little riding came again to the Supany River where it was very narrow, & ascended the second mountain which wound up west & by south with several springs[3] and fallings, after which we came to a steep descent at the foot whereof was a lovely descending Valley about six miles over with curious small risings . Our course over it was south west.[4] After we were over that, we came to a very steep descent, at the foot whereof stood the *Tetera*[5] Town in a very rich swamp between a branch[6] and the main River of Roanoke circled about with mountains. We got thither about three of the clock after we had travelled 25 miles. Here we were exceedingly civilly entertain'd.

[Sept. 9–11.] Saturday night, Sunday & monday we staid at the *Toteras*. *Perceute* being taken very sick of a fever & ague every afternoon, not withstanding on tuesday morning about nine of the clock we resolved to leave our horses with the *Toteras* & set forward.

Sept. 12. We left the town West and by North we travell'd that day sometimes southerly, sometimes westerly as the path went[7] over several high mountains & steep Vallies[8] crossing several branches & the

[1] ". . . marked in the path . . ." The periods are omitted after the M and the I following in the printed copy.

[2] ". . . at y^e^ foot of a Mountain . . ."

[3] "risings" — which would seem to be the proper word. These are the foothills of the Blue Ridge.

[4] ". . . w^th^ curious small risings, sometimes indifferent good way, their course over it was S: W: . . ."

[5] "Tolera." As above mentioned these were the Tutelo Indians, an eastern Siouan tribe. This town Mooney (op. cit., 35) locates on the headwaters of Dan river, about the present state line, southwest of Stuart, in Patrick county, Va., or possibly within the present limits of North Carolina. The name Tutelo, or Totero, is a contraction of Todirich-roone, the Iroquois designation "for all the Siouan tribes of Virginia and Carolina, including even the Catawba." For an excellent description of these Indians and their final dispersion, see Mooney, pp. 37–53.

[6] "Breach."

[7] ". . . and traveled something Southerdly, something Northerdly as the path went, . . ."

[8] ". . . Deep descending valleys, . . ."

River Roanoke several times all exceedingly stony ground until about four of the clock *Percente* being taken with his fit and verry weary we took up our quarters by the side of Roanoke River almost at the head of it at the foot of the great mountain. Our course was west & by north, having travill'd 25 miles. At the *Teteras* we hired one of their Indians for our Guide and left one of the *Apomatock* Indians there sick.[1]

Sept. 13. In the morning we set forward early. After we had travelled about three miles we came to the foot of the great mountain & found a very steep ascent so that we could scarse keep ourselves from sliding down again. It continued for three miles with small intermissions of better way. right up by the path on the left we saw the proportions of the mon. (whereof they have given an account it seems in a former relation which I have not — Note by M[r] Clayton).[2]

When we were got up to the Top of the mountain & set down very weary we saw very high mountains lying to the north & south as far as we could discern. Our course up the mountain was west by north. A very small descent on the other side and as soon as over we found the vallies tending westerly. It was a pleasing tho' dreadful sight to see the mountains & Hills as if piled one upon another. After we had travelled about three miles from the mountains, easily descending ground about 12 of the clock[3] we came to two trees mark'd with a coal MA. NI. the other cut in with MA & several other scratchments.[4]

Hard by a Run just like the swift creek at Mr Randolph's[5] in Virginia, emptying itself sometimes westerly sometimes northerly with curious meadows on each [side]. Going forward we found rich ground but having curious rising hills and brave meadows with grass about man's hight. many rivers running west-north-west and several Runs from the southerly mountains which we saw as we march'd, which run northerly into the

[1] This last sentence does not occur in the printed copy ; but see note 3, p. 51.

[2] The printed copy varies considerably in the wording of the entry under this date.

[3] The hour is omitted from the printed copy.

[4] ". . . w[th] a coale MANI y[e] other cut in with MA and several other Scrablem[ts] hard by a pretty swift small current, tending West, sometimes Northerdly, w[th] curious meadows on each side, y[e] ground as they past was rich but stoney, pleasant riseing hills, and all along brave rich meadows, w[th] grass above man's hight, . ."

[5] Seemingly Henry Randolph, uncle of the celebrated Col. William Randolph who arrived in Virginia in 1674. The former settled in Virginia in 1640 and died there thirty years later. His widow married Peter Field, an ancestor of Thomas Jefferson. Colonel William Randolph established his estate on Turkey island (since disappeared) in James river, about 20 miles below Richmond. It was from this vicinity that the Batts party started on its journey.

great River.[1] After we had travelled about 7 miles we came to a very steep descent where are found a great Run which emptied itself so we supposed into the great River northerly. our course being as the path went, west-south-west. We set forward west and had not gone far but we met again with the River, still broad running west & by north. We went over the great run emptying itself northerly into the great River. After we had marched about 6 miles northwest & by north we came to the River again where it was much broader than at the two other places. It ran here west and by south and so as we suppose round up westerly. Here we took up our quarters, after we had waded over, for the night. Due west, the soil, the farther we went [is] the richer & full of bare meadows & old fields.[2]

("Old fields" is a common expression for land that has been cultivated by the Indians & left fallow, which are generally overrun with what they call broom grass = Note by Mr Clayton)

Sept. 14. We set forward before sunrise our provisions being all spent we travel'd as the path went sometimes westerly sometimes southerly,[3] over good ground but stony, sometimes rising hills and then steep Descents[4] as we march'd in a clear place at the top of a hill we saw lying south west a curious prospect of hills like waves raised by a gentle breese of wind rising one upon another. Mr. Batts supposed he saw sayles: but I rather think them to be white clifts.[5] We marched about 20 miles this day and about three of the clock we took up our quarters to see if the Indians could kill us some Deer. being west & by north, very weary and hungry & Perceute continued very ill yet desired to go forward. We came this day over several brave runs and hope tomorrow to see the main River again.[6]

Sept. 15. Yesterday in the afternoon and this day we lived a Dog's life—hunger & ease. Our Indians having done their best could kill us

[1] The editor of the *N. Y. Doc. Col. Hist.* in a note identifies this with the "Great Kanhawa," but it is really New river, its chief tributary from the southeast.

[2] ". . . and so as they suppose tended W: here they took up their quarters, after they had waded over the soyle, the further they past the richer, and stony, full of brave meadows and old feilds, the course W."

[3] ". . . sometimes Southerdly, sometimes Northerdly . . ."

[4] ". . . steep descending valleys . . ."

[5] ". . . riseing one behind another, Mr Batts supposed he saw houses, but Mr Fallam rather tooke them to be white cliffs."

[6] The printed entry for this date ends: ". . . they past this day several brave brookes or small Rivelets."

no meat. The Deer they said were in such herds and the ground so dry that one or other of them could spy them.[1] About one of the clock we set forward & went about 15 miles over some exceedingly good, some indifferent[2] ground, a west and by north course till we came to a great run that empties itself west and by north as we suppose into the great River which we hope is nigh at hand. As we march'd we met with some wild gooseberries and exceeding large haws with which we were forced to feed ourselves.[3]

Sept. 16. Our guides went from us yesterday & we saw him no more till we returned to the *Toras*.[4] Our Indians went aranging betimes to see & kill us some Deer or meat. One came and told us they heard a Drum & a Gun go off to the northwards. They brought us some exceedingly good Grapes & killed two turkies which were very welcome and with which we feasted ourselves and about ten of the clock set forward & after we had travelled about 10 miles one of our Indians killed us a Deer & presently afterwards we had sight of a curious River like Apamatack River.[5] Its course here was north and so as we suppose runs west about certain curious[6] mountains we saw westward. Here we had up our quarters, our course having been west.[7] We understand the *Mohecan* Indians did here formerly live. It cannot be long since for we found corn stalks in the ground."[8]

Sept. 17. Early in the morning we went to seek some trees to mark our Indians being impatient of longer stay by reason it was like to be bad weather, & that it was so difficult to get provisions. We found four trees exceeding fit for our purpose that had been half bared[9] by our Indians,

[1] ". . . The Dear they said were in such heards, and the ground drye, y^t^ by the rattleing of the leaves they easely espied y^m^."

[2] "stony" for "indifferent."

[3] ". . . w^th^ w^ch^ they were forced to fill themselves, feeding on these and y^e^ hopes of better success on the morrow. They had hired an Indian guide from the Tolera who goeing to kill y^m^ some dear lost them." Compare note 1, p. 49.

[4] This opening sentence is combined with the closing sentence of the printed transcript. See the last note.

[5] ". . . they had a sight of a curious River like the Thames ag^t^ Chelcey, but had a fall y^t^ made a great noise whose course was there N. . . ." In a footnote Jefferson is cited as identifying this fall with "the Great falls of the Kanhawa, 90 miles above the mouth."

[6] ". . . certain pleasant mountains, . . ."

[7] ". . . here they took up their quarters, and found their course had been W. and by N."

[8] The last sentence of this entry in the printed copy reads: "Here they found Indian Feilds w^th^ corne stalks in them, and understood afterward the Mohetans had lived there not long before" . . .

[9] ". . . bark'd . . "

standing after one the other. We first proclaimed the King in these words: "Long live Charles the Second, by the grace of God King of England, Scotland, France, Ireland & Virginia & of all the Territories thereunto belonging. Defender of the faith etc." firing some guns and went to the first tree which we marked thus,  with a pair of marking irons for his sacred majesty.

Then the next thus WB for the right honble Governor Sir William Berkley, the third thus: AW for the honble. Major General Wood. The last thus: TB : R F · P. for Perceute who said he would learn Englishman. & on another tree hard by stand these letters one under another T T. N. P. V E. R[1] after we had done we went ourselves down to the river side; but not without great difficulty it being a piece of very rich ground where on the Moketans[2] had formerly lived, & grown up with weeds & small prickly Locusts & Thistles[3] to a very great height that it was almost impossible to pass. It cost us hard labour to get thro! When we came to the River side we found it better and broader than expected, much like James River at Col. Stagg's, the falls much like these falls. We imagined by the Water marks it flows here about three feat.[4] It was ebbing Water when we were here. We set up a stick by the Water side but found it ebb very slowly. Our Indians kept such a hollowing that we durst not stay any longer to make further tryal.[5] Immediately upon coming to our quarters we returned homewards and when we were on the top of a Hill we turned about & saw over against us, westerly, over a certain delightful hill a fog arise and a glimmering light

[1] In the printed copy the inscriptions following that for King Charles are: "W B for the Governor Sir William Berkley, the 3d Tree w[th] AW for the Major General Abraham Wood the last tree thus TBRH for themselves" — a rather senseless combination for Abraham Wood and Robert Fallows. Then follows the paragraph: "P for Perecute who said he would be an English man" Then another paragraph: "And on another Tree stands these letters for y[e] rest one under another [¶] I N. [for Jack Nesan, or Weason,] T T. N P. V. E R." Thomas Woods, or Wood, was left behind with the Hanahaskies on September 6 (see also entry of September 21), hence his initials do not appear. What names the remaining initials represent are not known.

[2] "Mohetons" in the printed copy.

[3] From the word "thistles" to the end of the next sentence ("get thro!") does not appear in the printed copy.

[4] . . . The printed copy differs so radically as to suggest that a part of the present manuscript had been omitted; but this is not the case. The former reads: . . . "better and broader than expected, full as broad as the Thames over ag[t] Waping, y[e] falls, much like the Falls of James River in Virginia, and imagined by the Water Marks it flowed there about 3 foot."

[5] ". . . further tryall least they should leave y[m]".

as from water. We supposed there to be a great Bay.[1] We came to the *Toteras*[2] Tuesday night where we found our horses, and ourselves wel entertain'd. We immediately had the news of M^r^ Byrd & his great company's Discoveries three miles from the *Tetera's* Town. We have found *Mohetan* Indians who having intelligence of our coming were afraid it had been to fight them and had sent him to the *Totera's* to inquire. We gave him satisfaction to the contrary & that we came as friends, presented him with three or four shots of powder. He told us by our Interpreter, that we had [been] from the mountains half way to the place they now live at. That the next town beyond them lived upon plain level, from whence came abundance of salt.[3] That he could inform us no further by reason that there were a great company of Indians that lived upon the great Water.[4]

Sept 21. After very civil entertainment we came from the *Toteras* & on Sunday morning the 24^th^ we came to the *Hanahaskies*. We found M^r^ Wood dead & burried & his horse likewise dead. After civil entertainment, with firing of guns at parting which is more than usual.

Sept. 25 on monday morning we came from thence & reached to the *Sapony's* that night where we stayed till wednesday.

Sept. 27 We came from thence they having been very courteous to us. At night we came to the *Apamatack*[5] Town, hungry, wet & weary.

Oct 1 being Sunday morning we arrived at Fort Henry.[6] God's holy name be praised for our preservation.[7]

[1] The verbiage varies greatly in the print, but the principal change is "Bog" for *Bay*. Compare the Clayton letter, following.

[2] "Toleras," as usual.

[3] Regarded by Mooney (op. cit., p. 36) as "probably about the present Mercer Salt Works on New river, in Summers county, West Virginia, or Salt pond in the adjacent Giles county, Virginia, so that the Mohetan must have lived within the mountains at the head of the New river on the western border of Virginia."

[4] The preceding entry is considerably condensed in the printed copy, and no reference is made to "M^r^ Byrd and his great company's Discoveries." This individual should not be confounded with the celebrated Col. William Byrd, who did not come to America until 1674 — three years after the present expedition was made. See the Clayton letter, following.

[5] "Apomatocks town." "Hungry, wet & weary" does not appear in the print. The entries from September 21 to October 1, inclusive, are condensed in seven lines under the single date "Sep^br^ 21^st^."

[6] Fort Henry was built by Lord Delawarr, in 1610, at or near Kiequotank, now Hampton, at the mouth of James river.

[7] "Christo duce et auspice Christo."

EXTRACT OF A LETTER OF MR CLAYTON TO THE ROYAL SOCIETY. READ TO THEM OCT. 24. 1688.

Wakefield Aug. 17. 1688.

My last was the journal of Thomas Batts, Thomas Woods & Robert Fallows.

I knew Col. Byrd that is mentioned to have been about that time as far as the Toteras. He is one of the intelligentest Gentlemen in all Virginia & knows more of Indian Affairs than any man in the country. I discoursed him about the river in the other side of the mountains said to ebb & flow which he assured me was a mistake in them for that it must run into a Lake now call'd *Petite* which is fresh Water, for since that time a Colony of the French are come down from Canada & have settled themselves in the back of Virginia where Fallows & the rest supposed there might be a Bay, but is a Lake to which they have given the name of Lake Petite there being several large Lakes betwixt that & Canada.

The French possessing themselves of these Lakes no doubt will in a short time be also truly masters of the Beaver trade. the greatest number of Beaver being caught there. The Colonel told me likewise that the common notion of the Lake of Canada, he was afraid was a mistake for the River supposed to come out of it had no communication with any of the Lakes, nor they with one another, but were distinct.

This expedition, crossing the mountains and passing over the eastern edge of the valley of the Mississippi, would certainly have substantiated England's claim to the territory beyond the Appalachians. Nearly two years were to elapse before Marquette, passing along the great lakes, up the Fox river, thence down the Wisconsin, should enter and discover the upper Mississippi on the 17th day of June, 1673.

Another manuscript, preserved in the same volume, is most interesting as serving to make clear certain passages in the Fallows journal. It was written about the year 1760 (although no date is given) by Dr John Mitchell, well known as the publisher of a very large and elaborate map of North America, dated 1755. I do not deem it necessary to copy the entire manuscript; but will quote the most important sections:

REMARKS ON THE JOURNALS OF BATTS AND FALLOWS IN THEIR DISCOVERIES OF THE WESTERN PARTS OF VIRGINIA IN 1671. BY JOHN MITCHELL. M· D· F. R. S.

The discovery of Batts & Fallows is well known in the history of Virginia and there is no manner of doubt of its being Authentic although it has not yet been published by the Royal Society . . .

1st The Appomatick Town the place that they went from is well known in Virginia to this Day, at least the River it stood upon, which is the Southern Branch of James River that is well known by the name of Appomattox: And Capt. Smith who was at the Town of Appomatuck as he calls it, laies it down on the River of Appomatox a little below the Falls opposite to where the Towns of Petersburg and Blandford now stand as may be seen by comparing his map of Virginia with our Map of North America.

2nd From this Town of Appomattack they set out along the Path that leads to *Aconeechy*[1] which is an Indian Town on the Borders of Virginia & Carolina marked in all our maps: From which path they travelled due west. Now you will see both these roads laid down in our Map of North America & exactly as they are described in the Journal they being the two Roads that lead from the Falls of Appomattox River southward to Carolina and westwards to our settlements in the Woods River in Virginia.

3rd The Road that goes to the westward which was the one that our Travellers went, crosses three branches of the Roanoke River a little below the mountains just as it is described in the Journal. . . . This branch of Roanoke River is called *Sapony* river in the Journal which has been called Staunton River (In memory of the Lady of the late Governor of Virginia) ever since the survey of those parts in running the Boundary line between Virginia and Carolina 1729.[2] The *Sapony* and *Totera* Indians mentioned in the Journal were then removed farther south upon the Heads of Peace River. . . . and they are now removed to the southward of that among the *Catawbas* as it is well known that all the Indians of those Parts have gone for many years in order to Protect themselves against the *Iroquois*. . .

4th From the branches of the Roanoke River they passed over the mountains, and came to a large River west of the mountains running

[1] The Okenechee path of the journal.

[2] See William Byrd [1674–1744; son of Colonel William Byrd], *History of the Dividing Line between Virginia and North Carolina, as run in 1728–29*, Richmond, 1866, 2 vols.

north and south; which plainly appears from this account of it to have been what we call Wood River in Virginia which is well known and well settled by our People there both above & below the Place where these People discovered it; and they frequently pass the mountains now in going to & from Wood River about the same place that is described in the Journal.

5. Nigh this river they saw from the Tops of the mountains an appearance of a water at a distance like a Lake or arm of the Sea: The same observation is made by another Person M[r] Christopher Gist[1] who lately surveyed this country hereabouts, and indeed upon the spots described in the Journal, as appears from both their Routes as laid down in our map above mentioned, which cross one another about the place where these Discoverers fell in with the Great River as they call it . . .

6. When they arrived at this river they were informed of a numerous & warlike nation of Indians that lived on the '*Great Water*' & made salt, the accounts of whom prevented their going, all which is agreeable to the times. The Indians they mean were the antient *Chawanoes* or *Chaouanons* who lived to the westward & northward of the place that these Discoverers were at, and were at this time 1671 engaged in a hot and bloody war with the Iroquois in which they were so closely pressed at this time that they were entirely extirpated or incorporated with the Iroquois the year following. These people might make salt no doubt, as the present inhabitants of those parts do from the many Salt springs that are found on the Rivers Ohio & Mississipi: and as for the *great water* that they lived upon that appears even by name to have been the Mississipi which is called from *Mesche Cebe* two words in the Indian Language that signify *Great River* or *Water;* so that if we had the Indian name of this *Great Water,* mentioned by our travelers instead of the Interpretation of it in English it is possible it might have been the same with Mississipi and whether or not the name they give it we see means the same thing.

This journal is certainly an interesting addition to the records of early explorations toward the west, and is of value to the ethnologist as showing the location of certain tribes in the latter part of the seventeenth century. This may be regarded as the first of the many journeys over the mountains, resulting ultimately in the settlement of the western country along the Mississippi.

LONDON, ENGLAND.

[1] See "Christopher Gist's Journal of a Visit with Major Washington, to the French Commander on the Ohio," *Mass. Hist. Soc. Coll.*, v, 25, 1836; also *Christopher Gist's Journals with Historical, Geographical and Ethnological Notes,* by William M. Darlington, Pittsburgh, 1893.

THE VIRGINIA INDIANS IN THE SEVENTEENTH CENTURY

By CHARLES C. WILLOUGHBY

That branch of the Algonquian family commonly known as the Virginia Indians occupied practically all of the tidewater region of Virginia and northeastern North Carolina as far south as Neuse river. They were hemmed in on the south and west by tribes of Iroquoian and Siouan stocks, and were separated on the north from the Canai, or Conoy, and Nanticoke, kindred of the Lenape, and from the Susquehannocks, an Iroquoian people, by Potomac river and Chesapeake bay. A small portion of the peninsula between this bay and the Atlantic south of Nanticoke was, however, occupied by Virginian tribes. The lands belonging to this people were divided into many communities or petty provinces, each governed by its local chief or *weroance*, who was usually subject to a higher chieftain or great weroance. Hariot,[1] referring to the southern portion of this region, says that a weroance or chief lord had under him one to six or eight or more villages, and that the greatest chief with whom he had dealings had but eighteen towns in his dominion. In the north Powhatan had acquired by inheritance or conquest more than thirty provinces,[2] covering nearly all the tidewater region of Virginia proper. To the greater chieftains the people paid "tribute of skinnes, beads, copper, pearle, deere, turkies, wild beasts and corne."[3]

The villages or communal units varied considerably in population, some having but few warriors, others two hundred or more. The bounds of each province were established and recognized, and its members were not allowed to encroach upon the lands of their neighbors.

[1] Thomas Hariot, *A Brief and True Report of the New Found Land of Virginia*, Holbein edition, p. 25.

[2] William Strachey, *The Historie of Travaile into Virginia Britannia*, Hakluyt Society, p. 55.

[3] Capt. John Smith, *True Travels*, Richmond edition, 1819, p. 144.

VILLAGES

The villages consisted of two or three to fifty or more houses placed usually upon a hill or on rising ground overlooking a river.[1] In many places the towns were but a mile or half a mile apart. The dwellings of a community were often distributed over a considerable area, with groves and gardens interspersed, some of the larger villages occupying as much as a hundred acres.

HOUSES

The ground-plan of the ordinary dwelling formed an oblong rectangle, its length being commonly double its width.[2] The framework consisted of poles set in two parallel rows enclosing the floor space. Opposite poles were bent over and lashed to each other in pairs, forming a series of arches of equal height. These were joined by horizontal poles placed at intervals, and all securely lashed together "with roots, bark, or the green wood of the white oak riven into thongs."[3] The ends of this arched framework were made of upright poles with horizontal bars added. Each house had commonly two doors, one at each end; these were hung with mats which could be turned up or let fall at pleasure.[4] If the occupants were absent for any length of time they barricaded the doors with logs of wood set against the mat to keep out wild beasts.

The coverings consisted of bark or of mats made of long rushes.[5] These rushes were probably the leaves of the flag or cat-o'-nine-tail, such as were used by many tribes for making covering mats, and were doubtless strung together on cords of bast, Indian hemp, or silk grass. Such mats were usually 3 or 4 feet wide and 8 or 10 feet in length, their ends being supplied with thin wooden strips about an inch wide, and with tying cords. Cords were also placed at intervals along the edges to assist in fastening the mat to the framework. When rolled up they occupied but little space, and were light and portable.

[1] Strachey, op. cit., p. 70.

[2] Hariot, op. cit., 24.

[3] Robert Beverley, *History of Virginia*, second edition, 1722, p. 1 8.

[4] Strachey, op. cit., p. 71.

[5] Hariot, op. cit., p. 24.

In sections where bark could be procured easily it was preferred for covering the better class of permanent habitations. Some of the houses had bark walls and mat-covered roofs. Strachey says[1] that bark was used only on the principal houses, "for so many barkes which goe to the making up of a howse are long tyme of purchasing." Such houses were tight and warm, but very smoky.



FIG. 2. — A village of the Virginia Indians, after Robert Beverley, illustrating the circular fort, two types of dwellings, a field of corn and squashes, and a temple surrounded by carved posts (termini). Most of the dwellings are too tall in proportion to their width. This is especially true of the round houses.

The poorer cabins were sometimes covered with boughs. There seems to be no evidence that the Virginia Indians lined the walls of their cabins with the beautifully woven and figured rush mats used for this purpose by the New England and other Algonquian tribes. It is very probable, however, that some of the mats used for bedding, to sit upon, and for general household purposes were of this kind.

The ordinary dwelling contained but one room.[2] The fireplace was in the center, the smoke passing out of an opening in the roof. On either side, next the wall, were platforms or bedsteads built in the usual way — short forked posts set into the ground at the four

[1] Op. cit., pp. 70, 71.

[2] Beverley, op. cit., p. 149.

corners, supporting stout poles over which shorter poles or stout reeds were laid. These in turn were covered with mats, and a mat was rolled up to serve as a pillow. Smith's description is as follows:[1]

> They lie on little hurdles of Reeds, covered with a Mat, borne from the ground a foote and more by a hurdle of wood. On these round about the house they lie heads and points one by the other against the fire, some covered with Mats, some with skins, and some starke naked lie on the ground, from 6 to 20 in a house.

The ordinary oblong dwelling seems to have been about 25 to 50 feet in length.[2] The width of the larger houses probably rarely exceeded 20 feet. The chiefs' cabins however were usually much longer.[3] Powhatan had a dwelling in each of his inherited provinces which was 30 or 40 yards long.[4] These long houses seem to have been used also for ceremonial purposes and as places for general entertainment. They were often divided into two or more rooms by mats and loose poles.[5] The long house at Roanoke had five rooms. By the dwelling was sometimes built a scaffold of reeds or osiers which was covered with mats, forming a shelter where the men sat for recreation or pleasure, and where, on a loft of hurdles, they laid their corn and fish to dry.[6]

The temporary lodges occupied by the Indians when on their hunting expeditions were set up in two or three hours and covered with mats which the women carried with them.[7] These lodges were probably hemispherical in form, with a circular ground-plan and of the same type as the round house of the northern and eastern Algonquians. The round houses are not shown in White's drawings, but they appear, somewhat distorted (their height being proportionally too great), in the accompanying illustration (fig. 2) from Beverley, who says they are shaped like a beehive.

The sweat-house, like that of New England, was an "oven" in some bank near the water's side. Three or four stones were placed

[1] Smith, op. cit., p. 131.
[2] Hariot, op. cit., p. 24.
[3] Henry Spelman, *Relation of Virginia*, p. 13.
[4] Smith, op. cit., p. 142.
[5] Ibid., p. 163. Beverley, op. cit., p. 149.
[6] Strachey, op. cit., p. 71.
[7] Ibid., p. 76.

in its center and covered with the inner bark of the oak which had been bruised in a mortar. This bark acted as a sponge, retaining a portion of the water poured over it until dispelled in steam. Upon leaving the sweat-house the men plunged themselves over head and ears in cold water.[1] Sometimes a small framework was constructed and covered with mats, the interior being heated with live coals having an earthen pot inverted over them.[2]

Temples

In every chief's territory there was a temple and a priest, two, three, or more.[3] The temple, known also as the priest's house, was 18 or 20 feet wide and 30 to 100 feet long,[4] its shape being usually like that of an ordinary dwelling. Hariot says it was sometimes covered with skin mats. There was commonly but one door, and that opened to the east. The western end of the temple was reserved for a sort of chancel separated from the main body of the building.[5] In the smaller temples this inner sanctuary was about 10 feet deep and was partitioned from the main room by mats. Within this chancel, raised upon pillars and containing the prepared bodies of defunct chieftains, stood a small, mat-covered charnel house similar in form to a dwelling. Within the temple and sometimes within the chancel stood wooden posts or stelæ with their upper portions carved into the form of human heads and painted black, "with their faces looking down the church." These were the effigies of their dead chiefs.[6] Sometimes a circle of these carved posts surrounded the temple, as illustrated at the right in figure 2. They were also set up around other celebrated places.

Within the chancel, near the remains of the chiefs, was the image of their god, or *Okee*, fashioned in the form of a man, "all black dressed with chaynes of perle." Sometimes the Okee was placed under the dead chiefs in a vault low in the ground and veiled with a mat. In some temples there were two or three of

[1] Beverley, op. cit., pp. 188, 189.
[2] Smith, op. cit., p. 137.
[3] Ibid., p. 138.
[4] Ibid.; Strachey, op. cit., p. 82; Beverley, op. cit., p. 166.
[5] Strachey, op. cit., p. 82.
[6] Ibid., p. 89; Smith, op. cit., p. 138.

these gods.[1] An Okee was occasionally kept in one of the rooms of a longhouse. It was also carried by war parties. This effigy was sometimes constructed as follows: A board three and a half feet long with a fork at the upper end for the reception of the head served as the foundation for the body. Strips of wood bent into half-circles were fastened to the front of the board to give shape to the chest and lower portion of the trunk. At the lower end of the body-piece another board was fastened which projected upon either side about fourteen inches as a foundation for the thighs.[2] The modeling was completed with moss and dressed skins, and the whole, carefully painted, was appropriately dressed, and ornamented with bracelets and necklaces of beads and copper. The Okee seen by Hariot at Secoton was about four feet in height and carved of wood. The face was flesh color, the breast white, and the remaining portions black with the exception of the thighs which were spotted with white.

The temple was in charge of one or more priests who maintained a perpetual fire on a hearth near the eastern end. The bodies of the dead chiefs were prepared as follows: They were first disemboweled, then the skin was laid back and the flesh cut from the bones. Strachey says this was dried over the fire into ashes and preserved in little pots. Hariot tells us it was dried in the sun and preserved in mats which were placed at the feet. The skeleton, still fastened together by ligaments, was enclosed again in its skin and stuffed with white sand[3] or with "pearle, copper, beads and such trash sowed in a skynne."[4] Upon it were placed bracelets, copper, ornaments, and strings of pearls and beads. Thus prepared, the remains were wrapped in white dressed skins and lastly rolled in mats and laid "orderly one by one as they dye in their turnes." The riches accumulated during life, such as beads, pearls, and copper, together with his tobacco pipe, and any object especially valued during life, were placed in baskets and deposited at the feet. The common people were buried in the ground in a grave about three feet deep.

[1] Hariot, op. cit., p. 26.
[2] Beverley, op. cit., p. 167.
[3] Ibid., p. 186.
[4] Strachey, op. cit., p. 89.

The principal temple of Powhatan was at Uttamussack and was usually in charge of seven priests. Smith says, at that locality "upon the top of certaine red sandy hils in the woods, there are three great houses filled with images of their Kings, and Devils, and Tombes of their Predecessors. . . . This place they count so holy as that but Priests and Kings dare come into them; nor the Salvages dare not goe up the river in boats by it, but they solemnly cast some peece of copper, white beads or Pocones into the river, for feare their Okee should be offended and revenged of them."

In a thicket of wood near Orapaks, Powhatan had a treasure house 50 or 60 yards in length, and frequented only by priests, where he kept his treasure, such as skins, beads, pearls, and copper, which he stored up against the time of his death and burial. Here also was his store of red paint for ointment, bows and arrows, shields and clubs. At the corners of the house stood four images as sentinels, one of a dragon, another of a bear, the third like a leopard, and the fourth like a giant-like man all made "evill favouredly according to their best workmanship." [1]

It is very apparent that the idea of the temple with its two apartments, its sacred fire, and carved posts (termini) was adopted from the southern Indians. The fact that the hair of the Okee was dressed as among Florida Indians may also be significant.

FORTS

The forts of the Virginia Indians were similar to those of other Atlantic coast Algonquians. Both the circular and the rectangular [2] forms seem to have been in use. The former type is well illustrated in figure 2, after Beverley. The stockade consisted of substantial puncheons (split tree trunk) or stout poles ten or twelve feet high above the ground,[3] placed close together with their lower ends buried three feet deep in the earth. Beverley says the stockade sometimes enclosed a whole town, though usually it encompassed only the chief's houses and as many others as they judged sufficient to harbor all the people when attacked by an enemy. Occasionally

[1] Smith, op. cit., p. 143.

[2] William Byrd, *The Dividing Line*, edited by J. S. Bassett, p. 95.

[3] Ibid. Beverley, op. cit., p. 149.

as an additional precaution the stockade was trebled. The fort at Powhatan was "prettily fortified with poles and barks of trees."[1] This shows that the palisades were sometimes covered, partially at least, with bark as an additional protection.



FIG. 3.—An aged Virginia Indian in his winter garment. From the original drawing in the British Museum, by John White, of the Roanoke Colony, 1585-88. (Courtesy of the Century Company.)

HAIR-DRESSING

The hair of the Virginia Indians was usually dressed according to the station of the individual. Most of the men wore a ridge of short upright hair extending from the forehead across the crown to the nape of the neck like a cock's comb, the arrangement of the rest of it being governed by the rank of the wearer. The chief men of Roanoke and probably also of other sections did not shave their

[1] Smith, op. cit., p. 238.

heads. They wore the usual crest, however, that which remained being of natural length. This was bound into a knot at the nape of the neck (fig. 3), or was divided and made into two knots, one behind each ear.[1]

The priests commonly wore the usual crest, but all other portions of the head were closely shaven with the exception of a narrow visor-like ridge above the forehead (fig. 5). They sometimes wore beards.

The following seems to have been the common method among the men generally: The hair on the right side below the crest was shaved close to prevent it "flappinge about ther bow stringe when they draw it to shoot,"[2] while that on the left side was allowed to attain its full length. This was sometimes tied into an "artificial and well laboured knot," stuck with many gewgaws. Sometimes an ornament of deer hair colored red was worn about the knot.[3] The women were the barbers, and with "two shells, will grate away the haire into any fashion they please." Considerable care was exercised in dressing the hair, and it was frequently anointed with walnut oil. The beard was usually removed as it appeared with mussel shells used as pincers.

The hair of the maids was cut in two ridges above the forehead, the rest being trussed up in a knot behind,[4] or the front and sides of the head were shaven close, the long back hair being prettily wound or "embroidered in plaits" which hung down the back at full length.[5] Married women wore it all of a length, cut off square below the ears, or wore it full length either hanging at the back or brought before in a simple lock and bound with a fillet of beads, or bound in a knot at the back of the head (fig. 4).

Tattooing

Tattooing was practised by both sexes, but it seems to have been more general among the women, who had their faces, breasts,

[1] Hariot, op. cit., pp. iii, vii.

[2] Spelman, op. cit., p. 18.

[3] G. Percy, *A Discourse of the Plantation of the Southerne Colony in Virginia*, English Scholar's Library, E. Arber, vol. 16, p. lxv.

[4] Hariot, op. cit., p. vi.

[5] Strachey, op. cit., p. 112.

shoulders, arms, and thighs "cuningly ymbrodered with divers workes[1] . . . as beasts, serpents, artificially wrought into their flesh with blacke spots."[2] Some of the women in Hariot's illustrations have a broad band of a conventional pattern encircling their arms and legs, a narrow band around the wrist, and also a necklace-like pattern around the neck. In White's drawing (fig. 4) tattooing is shown upon the arms and legs only.

Hariot says the chief men of Roanoke did not tattoo or paint. The men generally had a totemic mark (cicatrix) raised upon the back of the shoulder or some other part of the body, large enough to be easily distinguished at a considerable distance.

Body Painting

It was the usual custom for both sexes to paint or anoint themselves with an unguent made of bear grease or walnut oil mixed with pigment. This painting, while ornamental, served also as a protection against mosquitoes and other vermin. It was also supposed to protect the person from extremes of heat and cold.

The head and shoulders of both sexes, but more commonly of the women, were painted red, and sometimes the heads of the latter were decked with white down of birds.[3] Some of the men painted their bodies black and others yellow, "and being oyled over, they will stike therein the soft downe of sundry couloured birdes of blew birds, white herne shewes, and the feathers of the carnation birde . . . as if so many variety of laces were stitched to their skinns, which make a wondrous shew."[4] In time of war they painted or crossed their forehead, cheeks, and the right side of their head in various ways. The bodies of the priests were sometimes painted half black, half red. Their faces were painted "as ugly as they can devise," the eyes often being white and their cheeks having mustache-like streaks of red.[5]

Besides soot and variously colored earths generally employed for body painting the Virginia Indians made use of certain roots, the

[1] Strachey, op. cit., p. 66.
[2] Smith, op. cit., p. 130.
[3] Ibid., p. 162.
[4] Strachey, op. cit., p. 66.
[5] Smith, op. cit., p. 161.

most common of which, known as red puccoon, is identified as bloodroot (*Sanguinaria canadensis*).[1] This root, ground to powder and mixed with oil, forms a paint closely resembling burnt sienna, hardly comparable to the "scarlet-like colour" of Smith. Red puccoon was highly valued by the natives, and was often collected as tribute or was sacrificed to the gods. Another root, called musquaspenne, was the source of a brighter red pigment used also to paint mats, shields, and similar objects.[2]

A desirable yellow body color was derived from the yellow puccoon, or golden seal (*Hydrastis canadensis*). Another prized pigment was procured from a mine near the headwaters of the Quyough, a small branch of the Potomac. This is described by Smith as resembling antimony. Men painted with this pigment looked like "Blackmoores dusted all over with silver."



FIG. 4.—A Virginia Indian woman. From the original drawing by John White, 1585–88. (Courtesy of the Century Company.)

[1] For a discussion of the etymology and application of the term *puccoon*, see Mr Gerard's article in the present number.—EDITOR.

[2] Strachey, op. cit., p. 121.

Clothing

The children wore practically no clothing. Hariot says that girls of seven or eight years wore a very narrow breech-clout which supported a little moss in front. This dress was so scanty as to afford almost no protection, and a child thus costumed might well be termed naked. At about the age of twelve, however, the girl puts on a kind of apron of dressed skin and was "very shame-fac't to be seen bare."

The men commonly had a cord about the middle and wore a breech-clout of skin between their thighs, its ends being carried up between the body and the cord, over which they hung.[1] Sometimes the breech-clout consisted of nearly an entire skin with the head and tail attached. These being drawn over the girdle in front and behind served as ornaments. Chiefs and men of distinction often wore a sort of skirt of deer-skin finely dressed and fringed, it being similar to those worn by women. Sometimes both sexes wore deer-skin leggings, for warmth in cold weather or as a protection from brush and briars when hunting or collecting berries or material for mats.[2] The usual garment worn by women was a short skirt reaching from the waist to the middle of the thigh, made usually of dressed deer-skin. Both the upper and the lower edge was fringed. The garment was folded near its upper edge and the fringe turned outward (fig. 4). Similar skirts were woven of silk-grass fiber and were fringed on the under part by way of ornament.[3] Byrd remarks the skill with which the wearers adjusted this garment.

In addition to the skirt, or breech-clout, which constituted the ordinary dress, both sexes wore mantles of various kinds. Those for summer wear were usually of deerskin dressed without the hair and fringed at the edges. These were often "carved and couloured with some pretty work, or the proportion of beasts, fowle, tortayses or such like imagry,"[4] or were embroidered with shells, white beads, copper ornaments, pearls, or the teeth of animals.[5] Mantles for

[1] Beverley, op. cit., p. 141.

[2] Strachey, op. cit., p. 66.

[3] Byrd, op. cit., p. 224.

[4] Strachey, op. cit., p. 65.

[5] Smith, op. cit., p. 130. Force's *Tracts*, vol. III, no. 11, p. 41. Percey, op. cit. p. lxiv.

winter wear were made of skins of various animals dressed with the hair on, and were worn usually with the fur side inward. Some of the larger mantles of the older men were worn with the hair outward, the inner side being lined with fur.

Mantles were sometimes made of rabbit skins or of the feathers of the turkey and other birds "so prettily wrought and woven of threeds that nothing could be discerned but the feathers, which were exceeding warme and handsome." [1] Strachey's account of a feather cloak and the part it played in the toilet of the wife of Pipisco, a deposed chief, is interesting:

I was once early at her howse (yt being sommer tyme) when she was layed without dores under the shadowe of a broad-leaved tree, upon a pallett of osiers, spred over with four or five fyne grey matts, herself covered with a faire white drest deare skynne or two; and when she rose, she had a mayd who fetcht her a frontall of white currall, and pendants of great but imperfect couloured and worse drilled pearles, which she put into her eares, and a chayne, with long lyncks of copper, which they call Tapoantaminais, and which came twice or thrice about her neck. . . . Likewise her mayd fetcht her a mantell which they call puttawus, which is like a side cloake, made of blew feathers so arteficyally and thick sowed togither, that it seemed like a deepe purple satteen, and is very smooth and sleeke; and after she brought her water for her hands, and then a branch or twoo of frish green asshen leaves, as for a towell to dry them.[2]

Bunches of feathers were also used for drying the hands after washing. White dressed deer skin like that referred to above is of a milk white color and of the texture of chamois skin. But few examples are preserved in museums.

Short cloaks "made of fine hares skinnes quilted" (twisted strips of skin joined by twined weaving) were worn by the priests [3] (fig. 5). According to Eggleston these were sometimes woven of silk-grass fiber. Girdles and women's skirts also were woven of this fiber. In most instances where silk grass is referred to, the author undoubtedly had in mind Adam's needle (*Yucca filamentosa*), common in eastern Virginia and southward. Hariot writes:

There is a kind of grasse in the countrey uppon the blades whereof there groweth very good silke in form of a thin glittering skin to bee stript of. It

[1] Stachey, op. cit., p. 65.
[2] Ibid., pp. 57. 58.
[3] Hariot, op. cit., p. v.

groweth two foote and a halfe high or better: the blades are about two foot in ength, and half inch broad.

The colonists cultivated this plant and direction was given "for the planting of silk grass naturally growing in those parts which is approved to make the best cordage and linen in the world. Every household is bound to set 100 plants and the governor himself has set 5000."[1] Byrd may have referred to a different plant, possibly the silk weed (*Asclepias cornuti*) or the Indian hemp (*Apocynum cannabinum*) the fibers of which were extensively used by Indians in general for cordage and textile fabrics. He refers to "silk grass about as large as my little finger. The Indians use it in all their little manufactures."[2]

Mantles were of two types, the first being poncho-shaped. This had openings for the head and the right arm. The second, which was blanket-shaped, was thrown over the left shoulder and brought usually under the right arm, and sometimes was secured with a girdle.

Moccasins were occasionally worn. These were made usually of a single piece of buckskin drawn together like a purse on the top of the foot, and gathered around the ankle and tied with running strings. Sometimes an extra piece was put on the bottom to thicken the sole.[3] Smith, referring to the poorer Indians, says that some of them "have scarce to cover their nakednesse, but with grasse, the leaves of trees or such like."

Ornaments

Eagle or turkey feathers were worn in the hair, and sometimes the quill was ornamented with a rattlesnake's rattle. It was also a common custom to wear upon the head the stuffed skin of a hawk or other bird, with its wings spread. As a mark of distinction the chiefs often wore a head-band of polished copper.[4] Strachey says this was in the form of a new moon, a shape occasionally found in the mounds. A headdress of deer antlers was sometimes worn, also the dried head of an enemy. A chief gave Captain Newport a "crown of deer's hair dyed red."

[1] Force's *Tracts*, vol. IV, A Declaration of the Colonie of Virginia, 1620, p. 10.

[2] Byrd, op. cit., p. 224.

[3] Beverley, op. cit., p. 141.

[4] Smith, op. cit., p. 83.

It was not unusual for the women to wear a head-band or frontal of "coral" or a wreath of dyed fur, and the chief women sometimes wore copper head-bands. In Beverley's time, after the introduction of wampum by white traders, large head-rings of these beads were worn by both sexes, and the women used strings of wampum to bind up their hair.

The headdress of a chief priest sometimes consisted of a considerable cluster of the skins of snakes, weasels, "or other vermin," stuffed and tied together by their tails in such a way that the tails met at the top of the head like a tassel. Around the tassel was a circle or coronet of feathers. The stuffed skins hung down about the head, neck, and shoulders, and partly covered the face.



FIG. 5.—A Priest of the Virginia Indians. From the original drawing by John White, 1585–88. (Courtesy of the Century Company.)

The ears of both sexes were pierced with great holes, the women commonly having three in each ear, in which were hung strings of bones, shell, and copper beads, copper pendants, and other ornaments. Captain Amidas met the wife of a chief who wore in her ear strings of pearl beads as large as "great pease" which hung down to her mid-

dle.[1] The husband of this woman wore five or six copper pendants in each ear. It was a common custom for the men to wear the claw of a hawk, eagle, turkey, or bear, or even a live snake as an ear ornament.

Bracelets and neck ornaments of various kinds of beads were common. Beads of copper seem to have been most highly valued in the early colonial period. These were made of "shreeds of copper, beaten thinne and bright, and wound up hollowe," and were sometimes strung alternately with pearls which were occasionally stained to render them more attractive.[2] Beads of polished bone or shell were strung into necklaces either alone or with perforated pearls or copper beads. Some of these chains were long enough to pass several times around the neck. Necklaces of such construction as to be easily identified were worn by messengers as a proof of good faith. Powhatan gave Sir Thomas Dale a pearl necklace and requested that any messenger sent by Dale to him should wear it as a guaranty that the message was authentic.[3]

Breastplates of copper were worn; also gorgets of shell, about four inches in diameter, on which were engraved stars, circles, a half moon, or other designs that suited their fancy.[4]

Pearls of various shapes and sizes were comparatively common, but symmetrical pearls of uniform size were more rare. Strachey writes of having seen "manie chaynes and braceletts [of pearls] worne by the people, and wee have found plentie of them in the sepulchres of their kings, though discoloured by burning the oysters in the fier, and deformed by grosse boring." One of Hariot's companions obtained from the Indians about five thousand pearls, from which a sufficient number of good quality and of uniform size were obtained to make a "fayre chaine, which for their likenesse and uniformitie in roundnesse, orientness and pidenesse of many excellent colours, with equalitie in greatnesse, were verie fayre and rare."[5]

Those who have examined the thousands of pearls from the Ohio mounds in the Peabody Museum at Cambridge or in the Field

[1] Smith, op. cit., p. 83.

[2] Strachey, op. cit., p. 67. The "blue" or "violet colored" beads shown in White's original drawings are probably stained pearls.

[3] Smith, op. cit., pt. II, p. 19.

[4] Beverley, op. cit., p. 96.

[5] Hariot, op. cit., p. 11.

Museum at Chicago can readily understand these conditions. The pearl beads from the mounds vary in diameter from about an eighth of an inch to half an inch or more, the great majority being small and irregular, although there are many among them of good form and value. It is probable that most of the Virginia pearls were obtained from the freshwater mussel (*Unio*).

The most valued ornaments were made of copper. This was wrought, as above noted, into beads, pendants, breastplates, and head-bands. It is not improbable that even before Hariot's time European copper had been obtained in small quantities by the natives, but most of the copper in their possession at that period was probably of native origin. There can be no question, however, as to the native source of some of the copper found among them. Captain Newport understood from the Indians that it "was gott in bites of rocks and betweene cliffs in certayne vaynes."[1] The following statement by Hariot[2] undoubtedly refers to metals from the Lake Superior region:

> A hundred and fiftie miles into the maine in two townes wee founde with the inhabitantes diverse small plates of copper, that had been made as wee understood, by the inhabitantes that dwell further into the countrey: where as they say, are mountaines and Rivers that yeeld also whyte graynes of Mettall, which is to be deemed *Silver*. For confirmation whereof at the time of our first arrivall in the countrey I sawe, with some others with me, two small peeces of silver grosly beaten about the weight of a Trestone[3] hangyng in the eares of a *Wiroans* or *Chief Lorde* that dwelt about fourescore myles from us; of whom throwe enquiry, by the number of dayes and the waye, I learned that it had come to his handes from the same place or neere, where I after understood the copper was made and the white graynes of mettall founde. The aforesaid copper wee also founde by triall to hold silver.[4]

Native silver ornaments are rare; typical examples however are in the larger museums. In the Peabody Museum of Harvard University are two nuggets of pure silver weighing twelve and three-fourths pounds from a mound in Michigan. Accompanying the nuggets were two ornaments made from thin sheets of this metal, which had been hammered from native nuggets by the Indians.

[1] *Archæologia Americana*, vol. IV, p. 48.

[2] Hariot, op. cit., p. 10.

[3] A shilling coined by Henry VIII.

[4] Hariot, op. cit., p. 10.

Those familiar with the large breastplates and other ornaments wrought from native copper that have been obtained from the mounds of Ohio and the adjacent region will appreciate the following information gathered from Powhatan:

> And for copper, the hills to the norwest have that store, as the people themselves, remembered in the first chapter, called the Bocootauwanaukes, are said to part the solid mettall frome the stone without fire, bellows or additament, and beat it into plates, the like whereof is hardly found in any other part of the world.[1]

Powhatan endeavored to monopolize the trade in copper with the English in Virginia, keeping most of it himself, although he disposed of a small amount of it to neighboring tribes for "a hundred times its value." Strachey writes: "If our copper had ben well ordered in Virginia, as maye be hereafter, I am assured that lesse than one ounce will serve to entertagne the labour of a whole howshold for ten dayes."

There seems to have been four and perhaps five types of shell beads of native origin among the Virginia Indians. The first of these was a small univalve (*Marginella*) with the ends or side ground away to admit of stringing. These were sometimes used in decorating garments. The second type, called roanoke, was made of small rough-edged disks of shell perforated.[2] This in early days served also as currency. Roanoke was produced in considerable quantity, the greatest source of supply being apparently Cuscarawaoke, a village to the east of Chesapeake bay, just beyond the border of Powhatan's confederacy. The youngest daughter of Powhatan, a girl twelve years of age, was sold to a chief for two bushels of these beads.[3]

Another form of shell bead, two or three inches long and perforated lengthwise, was made from the columella of large univalves. These were highly valued. They also made from the columella a large bead with an outline approximately oval. These they called "runtees." This name was applied also to a discoidal bead about an inch in diameter, drilled edgewise.[4] Purple and white wampum

[1] Strachey, op. cit., pp. 27, 132.
[2] Beverley, op. cit., p. 196.
[3] Smith, op. cit., pt. II, p. 20.
[4] Beverley, op. cit., p. 196.

beads, made from the shell of the quahog and introduced into Virginia by white traders, were made largely by the Dutch and Swedes of the Middle states. During the latter part of the seventeenth century these became very common, and belts, garters, bracelets, large head-rings, wallets, etc., were made of them. Beverley[1] gives the current values of wampum at nine pence a yard for the white and eighteen pence a yard for the purple. This would equal about eighteen of the white beads for a penny.

Household Utensils

Each household had stones for cracking nuts and for grinding shell and other material.[2] These were undoubtedly like the pitted stones, anvils, hand-hammers, and grinding-stones common everywhere on old village sites.[3] The mortars and long pestles for crushing corn were of wood[4] and were probably of the same type as those used by other eastern tribes.

The wooden bowls and platters mentioned by Strachey were doubtless of the same type as those found among other eastern Algonquians, which were wrought from knotty portions of hard, close-grained wood by charring and scraping.

Gourds of various forms were used for the manufacture of rattles and household utensils, such as cups, ladles, and bottles. Baskets were of various sizes and kinds. They were made of silk grass, native hemp, corn-husk, the bark of trees,[5] wicker, and probably also of splints. Basket sieves were used for sifting corn-meal. Hariot figures an Indian with a large openwork carrying-basket, apparently of wicker, and of the style of construction known as twined weaving. Beverley figures a woman making a basket which she has suspended upside down by a cord from a branch, a not uncommon way of securing baskets of the twined type during the process of weaving.

Cooking pots were common. They were made of clay tempered with crushed shell or stone, a typical form being shown in figure 6.

[1] Beverley, op. cit., p. 196.

[2] Hariot, op. cit., p. 23.

[3] See, for example; the stone implements found at Pope's Creek, Maryland, described and illustrated by Mr Holmes in this number. — EDITOR.

[4] Strachey, op. cit., p. 129.

[5] Byrd, op. cit., p. 102. Spelman, op. cit., p. 17.

The bottom was rounded or more or less pointed. Hariot says: "Our potters . . . can make noe better; and then remove them from place to place as easelye as we can do our brassen kettles. After they have set them upon a heape of erthe to stay them from fallinge, they putt wood under which being kyndled one of them taketh great care that the fyre burn equallye Rounde abowt." Fire was kindled by chafing a dry, pointed stick in a hole of a little square piece of wood.[1] The wood of the pawpaw was preferred for this purpose.[2] The wigwam was lighted to some extent by the hearth fire. When additional light was desired, candles or torches about a foot long were used, made of splinters of pitch-pine or fir.[3]



FIG. 6.—Cooking in an Earthen pot. From the original drawing by John White, 1585–88. (Courtesy of the Century Company.)

MUSICAL INSTRUMENTS

Rattles were made of gourds in which a few pebbles were placed. They were supplied with wooden handles and were of various sizes and tones. Drums consisted of an earthen pot with a skin stretched over the aperture, the tone being regulated by partially filling the pot with water.[4] The war drum was made by covering the mouth of a deep wooden platter or bowl with a skin, at each of the four corners of which a walnut was tied. These were twisted or manipulated with a cord in such a way as to draw the skin very tight.[5]

[1] Smith, op. cit., p. 131.
[2] Byrd, op. cit., p. 314.
[3] Strachey, op. cit., p. 112.
[4] Beverley, op. cit., p. 193.
[5] Smith, op. cit., p. 136.

Smith tells us that they used a thick cane on which they piped as on a recorder. He undoubtedly refers to the native flageolet, so widely distributed among American tribes.

The Indians had numerous love songs which they sung "tunable enough."

Implements and Weapons

Knives were made of sharpened shell or from a splinter of reed with silicious coating. These reed knives were very effective implements and were employed in such delicate work as trimming arrow feathers. With this knife they would also "Joynt a Deere or any beast, shape his shooes, buskins, mantels, &c."[1]

Another useful implement, a small chisel, was made by setting the incisor of a beaver into a wooden handle. The hard outer enamel of the tooth formed a sharp cutting edge. This tool was used for notching arrows, working bone,[2] and for other fine work. Beaver-tooth blades are occasionally obtained from shell-heaps and village sites in the eastern states. They are usually made from the lower half of a lower incisor.

Smith says hatchets were made of a long stone, sharpened at both ends and put through a piece of wood. He probably refers to the long type of ungrooved axe or celt which was commonly hafted in this manner. Clubs, or swords as they were usually called by the Virginia writers, were carried by warriors in addition to the bow and arrow. These were shaped like a blunt-pointed, curved sword and were about three feet long; they were made of heavy wood, and sometimes were ornamented with engraved designs and paintings. Beverley found several with the remains of a dead chief in a temple. A "beard," painted red, from the breast of a wild turkey, and two of the longest feathers from his wing, were attached to the upper end of one of these weapon by a string six inches long.[3] Another type of club in frequent use was made from the "horne of a Deere put through a peece of wood in form of a Pickaxe."[4]

[1] Smith, op. cit., p. 132.

[2] Ibid.

[3] Beverley, op. cit., pp. 166, 167.

[4] Smith, op. cit., p. 132.

Bows were usually made of maple, locust wood, or witch-hazel, and scraped into form with sharp shells, the string being of stag's gut or a thong of deer-hide twisted.[1] Like all the Atlantic coast bows they were from five to six feet in length. For shooting squirrels in trees they used an arrow with a wooden shaft tipped with a bone point two or three inches in length. The arrow in more general use had a reed shaft and a wooden foreshaft. It was usually tipped with either a stone point, the spur of a turkey, or the bill of a bird. Antler tips also were used for arrowpoints.[2]

The flaker for making flint points was "a little bone" (antler), worn at the bracer or wrist-guard, which commonly was made from the skin of a wolf, badger, or black fox. For attaching the points and feathers to their arrows they used shredded sinew and a glue made from the tips of deer horns boiled to a jelly.

Quivers were made either of rushes, bark, or the skin of some animal. For defense the Indians had circular shields of bark which were sometimes painted red. Strachey says these were neither common nor used in all sections.[3] Hariot mentions "armours made of sticks wickered together with thread," but there seems to be no evidence that rod armor was in general use among the Virginian tribes. The Iroquois, however, used rod armor, and Champlain figures it. The party of Massawomekes (probably Iroquoian) in seven bark canoes met by Smith at the head of Chesapeake bay, were supplied with shields made in the same manner as the armor. These consisted of "small sticks woven betwixt strings of their hempe and silk grasse, as is our Cloth, but so firmely that no arrow could possibly pierce them." Smith was impressed by the superiority of workmanship evinced by the weapons and utensils carried by this party, "whose Targits, Baskets, Swords, Tobacco pipes, Platters, Bows, and everything they shewed, they much exceeded them of our parts" (Virginia).[4]

Hunting and Fishing

In hunting and fishing the Indians took "extreme pains." They esteemed it a pleasure and were very proud to be expert

[1] Strachey, op. cit., 105.

[2] Smith, op. cit., p. 132. Percey, op. cit., p. lxviii.

[3] Ibid., p. 132. Strachey, op. cit., pp. 106, 121.

[4] Ibid., pp. 135, 185.

therein. Every man did his best to show his dexterity, for by exceeding in these qualities they obtained their wives. It was the custom at certain seasons for two or three hundred individuals to leave their village and join in a grand hunt up toward the mountains three or four days' journey through the wilderness.[1] The women and children accompanied the men, the women carrying the mats and household utensils. Small cabins were made by erecting frames of poles and covering them with the mats brought by the women. These cabins were furnished with the objects necessary for comfort and convenience. On such occasions it was not unusual for the men to start a circle of fire five or six miles in compass. The deer within the circle were driven toward the center by the fire and the noise made by the men, until they were surrounded and slain. The hunters frequently took from six to fifteen deer in this manner.[2]

Another method of taking deer in large numbers was to drive them toward some point of land and force them into the river, where they were despatched by Indians in boats.

An ingenious method of stalking was practised by the individual hunter, who used for this purpose the skin of a deer with head and legs attached. The head was stuffed and made to look as natural as possible. This skin was put on by the hunter, who imitated the motions of a deer. In this disguise it was comparatively easy to approach within shooting distance of the game.[3]

The Indians were naturally expert bowmen and at forty yards would shoot level or very near the mark. Their bows would carry one hundred and twenty yards at random. The boys were instructed in archery at a very early age, and it was a common practice for their mothers to refuse them food in the morning until they had succeeded in hitting a designated mark.[4] All manner of game was sought for food and for their skins, including squirrels, rabbits and larger quadrupeds, and turkeys, grouse, and water fowl in general.

In taking fish the Indians acquired great proficiency. They

[1] Strachey, op. cit., p. 75.

[2] Smith, op. cit., p. 133; Byrd, op. cit., p. 223.

[3] Ibid., p. 134.

[4] Strachey, op. cit., p. 110.

employed the hook and line, the noose, the dip-net and seine, weirs of various kinds, fish traps, the bow and arrow, the spear, and probably also the harpoon. Their nets and other cordage were made of bast, sinew, or the fiber of plants. The source of one of the most valued fibers was *Yucca filamentosa*.

For angling they used "long small rodds at the end whereof they have a clift to which the lyne is fastened, and at the lyne they hang a hooke."[1] "Their hookes are either a bone grated . . . in forme of a crooked pinne or fish hooke, or of the splinter of bone tyed to the clift of a little sticke, and with the end of the line they tie on the bait."[2] Barbless fish-hooks made wholly of bone may have been of prehistoric origin in the Atlantic coast region. A few have been found on ancient village sites and in shell-heaps, but they do not seem to have been in general use. The second type noted above was the common form, and was constructed as follows: A splinter of bone an inch and a half or two inches in length was ground to a sharp point at one end, the opposite extremity being flattened and brought to a wedge-shaped point. The shank of the hook was made from a piece of wood two or three inches long, the lower end of which was split to receive the wedge-shaped end of the bone point, which was inserted at an angle of about forty-five degrees and the two pieces bound firmly together. Champlain found this hook in use among the New England Indians and describes it with his usual accuracy. Hundreds of these bone points have been taken from the shell-heaps of the Atlantic coast. This hook survives among the Nascapee and Montagnais north of the St Lawrence.

Sturgeon were often caught in the narrow parts of rivers by slipping a noose over the tail.[3]

Nets were as "formally brayed and mashed" as those of the English.[4] Dip-nets were of the ordinary form and were used principally for taking fish entrapped in weirs. Weirs were made of reeds about as large as a man's finger, woven together with splints of white

[1] Strachey, op. cit., p. 75.
[2] Smith, op. cit., p. 133.
[3] Beverley, op. cit., p. 131.
[4] Strachey, op. cit., p. 75.

oak. This frame was fastened to stakes driven into the bed of the stream. Enclosures were arranged in such manner as to allow the fish to enter easily, where they were taken in dip-nets by men in boats. Sometimes they carried a hedge across a creek at high water, and when the water was low, would go into the run, then contracted into a narrow stream, and secure the fish. Where the water was shallow and the current strong, a sort of dam of loose stones was often built quite across a stream, leaving openings or tunnels at intervals. At the entrance to these tunnels were placed conical fish traps about 10 feet in length and 3 feet in diameter at the broadest end, woven of reeds.[1] Similar fish traps were used by other Algonquian tribes. Champlain found them in the St Lawrence and on the New England coast, and they are still made by some of the Georgia negroes, who evidently adopted them from the Indians. At the larger end of the trap is a funnel-shaped arrangement of flexible splints with their points projecting inward. This allows the fish to enter, but prevents their escape. The fish are removed from the trap by a door in its side.

Fish were taken with the bow and arrow, the latter being attached to a long cord. They were also taken with spears, the simplest form of which was a sharpened stick. The more carefully constructed spears were pointed with a sharpened bone, a fish spine, or the tail of a horseshoe crab.[2] Fish were often speared at night by the light of a fire built upon a raised hearth in the center of the dugout canoe. It was one man's work to tend the fire and keep it flaming, which served the double purpose of dazzling the eyes of the fish and of lighting the water and the bottom of the river so that the fish could be easily taken with spears by the other men in the boat.

The dugout canoe was the prevailing type in Virginia. This was made of a single log by charring, and scraping with shells and sharp stones. The larger canoes were forty or fifty feet in length and capable of carrying forty men. Usually, however, they were much smaller. Bark canoes were made principally for the tem-

[1] Beverley, op. cit., pp. 130, 131.
[2] Hariot, op. cit., p. xiii.

porary use of travelers in crossing streams and lakes.[1] These seem to have been rude affairs, much inferior in every way to those of the north.

AGRICULTURE

Each family had its garden, a plot of ground commonly one hundred to two hundred feet square,[2] which was carefully cultivated, being kept "as neat and cleane as we doe our gardein bedds."[3] In clearing new land the trees were girdled near the ground by bruising the bark, and when sufficiently dry they were felled by the aid of fire and stone axes and the stumps burned. In preparing a field the ground was worked over by "the men with wooden instruments made almost in forme of mattockes or hoes with long handles." The weeds and corn stubble were dug up and allowed to dry, then made into many small heaps and burned. The woman's planting implement, which she used sitting, was about a foot long and five inches in breadth. (The large, leaf-shaped flint "spades" of the southern Illinois region had probably the same function.) Beginning at the corner of the field the woman with this implement made a series of holes about three feet apart, in each one of which, at intervals of about an inch, she placed four grains of corn and two beans, and covered them with earth. "And so through the whole plot . . . but with this regard that they be made in rankes, every ranke differing from other half a fadome or a yarde, and the holes also in every ranke as much, by this means there is a yard spare ground betweene every hole." Within this space, according to discretion, here and there were planted pumpkin, squash, sunflower, and other seeds.[4] Occasionally a vegetable of one kind occupied a bed by itself, but usually the various species were grown together in one field, as above noted. The gardens were kept carefully weeded by the women and children, and when the corn was about half grown it was hilled.

Little houses or shelters raised upon platforms in the fields were occupied by watchers, whose duty it was to keep the birds from

[1] Beverley, op. cit., p. 156.

[2] Strachey, op. cit., p. 72.

[3] Ibid., pp. 72, 112.

[4] Hariot, op. cit., pp. 14, 15. Smith, op. cit., p. 126.

injuring the crops. Corn, beans, pumpkins, squashes, tobacco, and the sunflower were raised in these gardens. To this list Hariot adds an herb called melden by the Dutch, the seeds of which were used to thicken broth, and the saline ashes of its stalk to season broths and stews. This plant is identified by Pickering as Mexican tea (*Chenopodium ambrosioides*).[1] A cache of nearly three pecks of the seeds of this plant or a closely allied species was found in a cave in Hocking county, Ohio, about thirty years ago.[2] According to Smith and Strachey the Indians planted also the maracock, or passion flower (*Passiflora incarnata*). "There were cart loads" of its fruit in every cultivated field. Beverley, however, says they grew spontaneously, and while the Indians often ate the fruit, they did not take the trouble to plant it.

There were four varieties of corn (*Zea mays*), two early and two late. One of the early kinds was but three or four feet high, and it bore an ear about the size of a "case nife handle." Two crops of this variety could be raised in one season. The second kind of early corn grew to a height of nine or ten feet, with an ear seven or eight inches in length. The kernels of both early varieties were plump and well filled out. The two varieties of late corn were recognized by the shape of the kernel: the first, known as flint corn, having a plump grain, the other, called "she corn," a dent or depression in the outer end of the kernel. The ears were of various colors, some being white, yellow, or red, others blue or variegated.[3]

Beans (*Phaseolus vulgaris*) were of several colors and sizes. The "pease" noted by early Virginia writers were a small variety of bean, perhaps the pea bean (*P. nanus*). The pumpkin (*Cucurbita maxima*) is generally supposed to have been grown by most of the agricultural tribes as far north as the St Lawrence.[4]

Squashes (*Cucurbita polymorphia*), the "asquta squash" of the New England Indians, called "macocks" by the Virginia natives, were of several varieties. They were usually cooked before ripening, when the shell and seeds were tender. Some varieties furnished

[1] Charles Pickering, *History of Plants*, p. 710.
[2] *Peabody Museum Reports*, vol. II, p. 49.
[3] Beverley, op. cit., pp. 126, 127.
[4] Pickering, op. cit., p. 710.

the gourds from which cups, bowls, ladles, bottles, and rattles were made.

The great sunflower (*Helianthus annuus*) was cultivated for its seeds, which were used "both to make a kind of bread and broth."[1]

Tobacco (*Nicotiana rustica*), called by the natives "apooke," is described by Strachey as being poor and weak in comparison with that of the West Indies. Its height was rather less than three feet, its blossom yellow, and the leaf short, thick, and rounding at its upper end. The plant was dried over a fire, or sometimes in the sun, and crumbled to powder — stalk, leaves, and all. It was usually grown in a bed by itself.

Muskmelons and watermelons, so accurately described by Beverley as cultivated by the natives, were probably introduced by Europeans. This is also true of the sweet potato, although this plant originated in tropical America.

The gardens of the principal chiefs were planted by the people, who met by appointment and with "such diligence worketh as for the most part all ye Kinges corne is set on a day." In harvesting, the corn was picked and placed in hand-baskets, then emptied into larger baskets. The ears were thoroughly dried upon mats, care being taken to protect them from the dew by covering them at night. When sufficiently dry the corn was placed in the house in piles, and shelled by "wringinge the eares in peises betwene ther hands." The shelled corn was placed in a great storage basket which "taketh upp the best part of some of ther howses."[2] Corn was sometimes cached.

Food in General

The space allotted to this paper will permit only a brief reference to the more important foods. Smith writes that during March and April the Virginia Indians lived principally on turkeys, squirrels, and fish. In May and June they planted their fields and subsisted on fish, acorns, and walnuts; or they would disperse in small companies and collect fish, game, crabs, oysters, land tortoises, and wild fruits. In June, July, and August their food consisted mostly of fish, berries, green corn, and roots of the tuckahoe. The above

[1] Hariot, op. cit., p. 14.

[2] Spelman, op. cit., p. 17.

list is of course not exhaustive. In the fall the natives fared quite sumptuously on the products of their fields. After the harvest came their customary hunting expedition westward toward the mountains in search of deer and other game which had become scarce in the vicinity of the villages. During the winter months their food consisted of corn, beans, nuts and acorns, dried fruit, and berries, and what game they could secure. Fish and meat were preserved by drying upon hurdles over the fire or upon spits. Oysters were strung upon strings cured in smoke[1] and packed in baskets. Peaches and other fruits and berries were dried upon mats and stored for future consumption. Chestnuts were eaten raw or made into meal. Walnuts were eaten after the usual manner, or were crushed between stones and the oil extracted by boiling; they were also crushed in a mortar with water and used in stews. Acorns were dried upon hurdles over the fire, then prepared by boiling. Seeds, including wild rice (*Zizania aquatica*), and roots of many kinds were collected. Among the more important roots were ground nuts (*Apios tuberosa*) and tuckahoe, which "groweth like a flagge in Marishes. In one day a Salvage will gather sufficient for



FIG. 7.—Manner of serving food upon a wooden platter. Usually the men ate by themselves and were served by the women. From the original drawing by John White, 1585–88. (Courtesy of the Century Company.)

[1] Strachey, op. cit., p. 127.

a weeke."[1] The term tuckahoe seems to have been applied to roots of various species as well as to a fungus (*Pachyma cocos*) growing underground in sandy pine-barrens.[2]

Their main reliance for a considerable portion of the year, however, was corn. The importance of this cereal as a winter food is shown by the large amount in storage. In 1610 Captain Argoll obtained by barter from the chief Potawomack nearly four hundred bushels of corn and beans.[3] Captain Smith procured from Powhatan two or three hundred bushels of corn for a pound or two of blue glass beads. At another time he "wrangled out of" this chief eighty bushels of corn for a copper kettle.

A large amount of green corn was consumed, it being commonly roasted or boiled. Their late corn, if not wholly ripe when gathered, was parched in hot ashes to preserve it. Meal was prepared by grinding dry corn in a mortar and sifting through a basket sieve, the meal being received in a wooden platter. Parched meal was often eaten dry or with the addition of a little water. Cakes were made from corn, wild rice, or sunflower seeds, ground and mixed with water, and baked in hot ashes, or boiled. Many kinds of stews and pottage were prepared that were both palatable and nutritious. Food was fairly abundant and there were but few months in a season when even the more improvident natives were not well supplied.

[1] Smith, op. cit., p. 123.

[2] J. H. Gore, Tuckahoe or Indian Bread, *Smithsonian Report* for 1881. See also Mr Gerard's description of this food product, *postea*.

[3] Strachey, op. cit., p. 38.

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VIRGINIA'S INDIAN CONTRIBUTIONS TO ENGLISH

By WILLIAM R. GERARD

Virginia, for which has been claimed the honor of being the "Mother of Presidents" and the "Mother of States," can claim for herself the maternity of a certain number of aboriginal words which have been adopted into the English language, and which, with their offspring, have added somewhat largely to their fostermother's vocabulary. The majority of these adopted vocables (many of them, as such, dating back to the first years of the settlement of Jamestown) are doubtless more or less familiar to most of the intelligent people of this country, while some of them, such as 'tomahawk,' 'moccasin,' 'hickory,' 'hominy,' 'raccoon,' and 'opossum,' having had the advantage of extensive travel abroad, have become as widely known wherever English is spoken as is the word 'Indian' in its sense of an original inhabitant of America.

These terms, all of Algonquian lineage, embrace the names of a few animals that were strange to the *Utäsantuwâk*, as the settlers at Jamestown were called by the natives; names applied to certain plants indigenous to the country and which the newcomers found it easier to adopt than invent new ones; names of a few food preparations which the settlers were early forced to add to their scant bill of fare; names of a number of articles found in use among the Indians and not possessed by the Europeans; a few names of a miscellaneous character; and certain titles applied by the natives to themselves in their political relations, and which, with the passing away of these whilom lords of the forest, died out with them, but are still kept in remembrance in dictionaries.

Through the transference of some of these native terms to objects, animate and inanimate, of precisely the same or of a very similar kind, and, by metaphor, to others of a nature totally diverse; through the very numerous compounds into which others have entered; and through the change of sense of others again from that

of substantives to that of verbs and adjectives, and from that of adjectives to that of substantives with a meaning different from that which they possessed among the Indians, the original application and etymological scope of these adopted words, many of them more or less corrupted, have been extended to somewhat wide limits.

To present an enumeration of these terms, along with the different senses which they have taken, some of the combinations into which they have entered, their etymology, and notes on their history, is the object of this article.[1]

ATAMASCO; earlier, ATTAMUSCO. — A name, usually employed in combination with the word 'Lily,' for *Zephyranthes Atamasco*, of the order Amaryllidaceæ, a plant with long and very narrow bright green leaves, arising, with a short scape (which bears a pretty white and pink flower), from a coated bulb. It is a native of Virginia and the Carolinas, where it is held in like esteem with the daisy in England. It is sometimes called stagger-grass, from its long grass-like leaves and its production in horses and cattle of an affection termed "staggers." Having suspicious properties and being of no economic use, the plant probably had no aboriginal name, the one that it bears having possibly been given *ex tempore* by a native to some colonial collector or admirer who had shown him the entire plant and asked its Indian appellation. The plant was introduced into England under this name at an early date.[2]

ETYMOLOGY: From Tapehanek of Virginia *ätamäsku*, 'under grass,' a name descriptive of the bulb surmounted by grass-like leaves; from Tapehanek *ätam*, Cree *ätam*, Lenâpe *älam*, *äram*, Ojibwe *änam*, 'under,' and *-äsku*, 'grass.'

CHINQUAPIN, CHINQUOPIN, CHINCAPIN, CHINCOPIN; earlier, CHE-

[1] In the etymologies, the vowels have the following sounds: *a* as in far; *ă* nearly as in what, not; *ā* as in hat; *â* as in law; *e* as in they; *ĕ* as in met; *i* as in pique; *ĭ* as in pick; *o* as in note; *u* as in rule; *ŭ* as in but. Of the consonants, it is only necessary to explain that *ch* has a guttural sound as in Ger. *ich*; *tsh* is like *ch* in church; and ⁿ represents a nasal sound of the preceding vowel. An apostrophe (') denotes the syncope of a short vowel, while a superior reversed comma (ʻ) before a consonant is a mark of aspiration.

[2] "The *Indians* in Virginia do call it *Attamusco*." — Parkinson, *Paradisus*, p. 87 (1629). "The *Attamusco Lily*." — Catesby, *Nat. Hist. Canada, Florida*, etc., II, append., p. 12 (1754). "*Atamasco lily* . . . blossoms in April." — Drayton, *View of S. Carolina*, p. 67 (1802).

CHINQUAMIN,[1] CHICHIQUAMIN, CHINCOMEN.[2] — The fruit of *Castanea pumila*, consisting of a very small ovoid pointed nut scarcely half the size of a common chestnut, enclosed in a bristly and prickly bur. This nut, which is very sweet, and tastes somewhat like a filbert, was gathered in large quantities as it lay on the ground, after the frosts of autumn, by the Indian women, who, after drying it, stored it in large baskets in the wigwam for future use. It was highly prized by the Virginia Indians, whose women, after boiling it four hours, made from it both broth and bread for the chief men, or for use at the greatest feasts; or, converting it into meal, employed it as an ingredient in their meat soups. (2) The seed of *Nelumbo lutea*, called also "water chinquapin." (3) *Quercus prinoides*, from the resemblance of its foliage to that of *Castanea pumila;* called also "chinquapin oak." (4) *Quercus Muhlenbergii*, from the resemblance of its acorns, in size, shape, and taste, to the chinquapin. (5) The fruit of *Castanopsis chrysophylla*, of California, a small nut enclosed, like the chinquapin, in a spiny bur. "Chinquapin perch" is a Southern name for the fish *Pomoxis sparoides*.

ETYMOLOGY: With erroneous change of suffix from *-mĕn* or *-mīn*, meaning 'seed,' 'nut,' 'fruit,' to *-pĭn*, meaning 'root,' from Renâpe of Virginia *tshĭ"komen* or *tshĭ"kwĕmĕn*, an aphæretic form of *tshĭtshĭ"kwĕmĕn*, 'rattle-nut;' from, or from the same root as, Virginia *tshĭ"kwan*, a rattle, an aphæretic form of *tshĭtshĭ"kwan*, cognate with Nipissing and Montagnais (Cree) *shĭshĭkwan*, Ojibwe *jĭshĭgwan*, Prairie Cree *sĭsĭkwan*, Menomini *ssĭsĭkwan*.

The change of the suffix *-mĕn* or *-mīn* to *-pĭn* seems to have occurred at the beginning of the last quarter of the 17th century.[3]

Since the nuts do not rattle in the dry bur, the name is probably due to the fact of their having been used by the Indians in their squash-shell rattles or *tchĭ"kwanâk*. By the Renâpe of Roanoke island, the nut was

[1] "They haue a small fruit growing on little trees, husked like a Chesnut, but the fruit most like a small Acorne. This they call *Chechinquamins*, which they esteeme a great daintie." — Smith, *Map of Virginia*, p. 11 (1612).

[2] "Many goodly groues of *Chincomen trees* with a huske like vnto a Chesnut, raw or boyled, luscious and harty meate." — Hamor, *A True Discourse of the Present Estate of Virginia*, p. 23 (1615).

[3] "A Chincopine, which is like a Chesnut with a Burry huske, but lesse by far."— Glover in *Philosoph. Transact.*, XI, p. 629 (1676). "Chinkapins have a Taste some thing like a Chesnut:"—Beverley, *Hist. of Virginia*, bk. II, p. 16 (1705).

called *sapumĕn*, or 'transpiercing fruit' (in allusion to the prickly burs), a name which, in the form of *sabomĭn*, is applied by the Ojibwe to the prickly gooseberry (*Ribes Cynosbati*), which, in turn, was called by the Renâpe of Virginia *äräkomĕn*, 'scratch fruit.'

COCKAROUSE, COCKEROUSE, CAUCOROUSE, COCCOROUS. — A war captain[1] and Elder[2] of the Algonquians of Virginia, selected from among the oldest, bravest, and wealthiest men of the community to which he belonged,[3] and performing the function of adviser[4] to the wirowance of his town. (2) Later on, a good hunter or a man who was noted for performing daring deeds.[5] (3) A term used by the English colonists for a person of consequence.

ETYMOLOGY: From Renâpe of Virginia *kakärusu*, 'he speaks at some length,' 'he speaks repeatedly,' frequentative form of *kärusu*, 'he speaks,' 'he talks.'

CUSHAW, CASHAW, KERSHAW. — The crook-neck squash (*Cucurbita Pepo*, var.), called also, by market-gardeners, "cashaw pumpkin." *Cushaw* was mentioned first by Beverley (1705)[6] as the name of one of the plants which the Virginia Indians had growing near their towns, along with pumpkins and melons.

ETYMOLOGY: A word of uncertain meaning. Perhaps, short for a form *askushaw*, from the root *ask*, 'to be green,' 'unripe' (the state in which squashes are gathered for food); but the meaning of the suffix *-ushaw* (probably miswritten) is not clear.

[1] ". . . *Caucorouse*, which is Captaine." — Smith, *Gen. Hist. of Virginia*, lib. 2, p. 38 (1624).

[2] ". . . their Elders called *Caw-cawwassoughes* [*kakarusus*]." — Smith, *Map of Virginia*, p. 23 (1612).

[3] "Every small Town is a petty Kingdom govern'd by an absolute *Monarch*, assisted and advised by his *great Men* selected out of the gravest, oldest, bravest and richest; if I may allow their Dear-Skins, *Peak* and *Roenoak* to be Wealth."— Jones, *The Present State of Virginia*, p. 8 (1724).

[4] "A *Cockarouse* is one that has the Honour to be of the King or Queen's Council, with Relation to the Affairs of Government, and has a great Share in the Administration." — Beverley, *Hist. of Virginia*, bk. III, p. 57 (1705).

[5] "Thus a Fish finding it self intangled, wou'd flounce and often pull him under Water, and then that Man was counted a *Cockarouse*, or brave fellow, that wou'd not let go:" — Beverley, *Hist. of Virginia*, bk. II, p. 33 (1705).

[6] "Their Cushaws are a kind of Pompion, of a bluish green Colour, streaked with White, when they are fit for Use. They are larger than the Pompions, and have a long narrow Neck."—Beverley, *Hist. of Virginia*, bk. II, p. 27 (1705). ". . . Cashaws, an excellent Fruit boil'd:" — Lawson, *A New Voyage to Carolina*, p. 77 (1709). "The *Cashaw*, or *Kershaw*, . . . a pumpkin, may possibly be a corruption of an Indian name:" — Devere, *Americanisms*, p. 56 (1872).

HICKORY, HICKORIE, HICKERY, HICCORY, HIQUERY, HICCORA; earlier, PECKICKERY, PIECK HICKERY, POKIKERIE, POCKICKERY, POKAHICHORY, POCOHIQUARA, PAWCOHICCORA, POWCOHICORA. — In the uncorrupted form, a name for a milk-like emulsion prepared by the Virginia Indian women from the nuts of *Carya tomentosa* (called by the Southern Renâpe *ästnimĕnär*, or 'stone-nuts,' from the hardness of their shell; and the tree, *ästnimiŋ*), and used for giving richness and flavor to their food preparations, such as broths, boiled corn, beans, peas, squashes, etc.;[1] afterward, among the colonists, a name for the nuts[2] themselves and for the tree that bore them; and later, by a further extension of the metaphor, a general designation for all the trees of the genus *Carya*. "Hickory," used without an attributive, is the popular name for *C. tomentosa*, the most widely distributed species. The name has been extended in Barbadoes, Tasmania, and New South Wales to certain trees of other genera (those of *Rivinia*, *Acacia*, and *Eriostemon*), of which the wood possesses characters resembling those of the wood of the American hickories. (2) As an epithet, the word is used to express the qualities of "strength," "toughness," firmness," "flexibility," or "elasticity" in the object qualified, as in "hickory acacia," *Acacia leprosa;* "hickory Catholic;" "hickory elm," *Ulmus racemosa;* "hickory eucalyptus," *Eucalyptus punctatus;* "hickory pine," *Pinus pungens;* "hickory Quaker"; "hickory shad," *Pomolobus mediocris;* "hickory shirt," etc. The name has entered into many compounds, in some cases attributively, as: "Hickory-borer," *Clytus pictus*, a beetle; "hickory-girdler," *Oncideres cingulatus*, a beetle; "hickory-head," the ruddy duck, *Erismatura rubida;* "hickory leaf," a variety of tobacco, etc. Finally, "Old Hickory" is a term which will live in history as a nick-name applied in 1813

[1] "Then doe they dry them ['walnuts'] againe vpon a mat ouer a hurdle. After, they put it into a morter of wood, and beat it very small: that done, they mix it with water, that the shels may sinke to the bottome. This water will be coloured as milk; which they cal *Pawcohiccora*, and keepe it for their vse." — Smith, *Map of Virginia*, p. 12 (1612).

". a kind of mylke, or oylie liquor, which they call powcohicora." — Strachey, *Hist. of Trauaile into Virginia* (1616).

[2] "The ingredient which performed the milky part was nothing but dry pockickery nuts." — Norwood, *Voyage to Virginia*, p. 37 (1649). "Hickory-nuts are of several Sorts:" — Beverley, *Hist. of Virginia*, bk. II, p. 16 (1705).

to General Andrew Jackson, in allusion to his tough, unyielding disposition.

ETYMOLOGY: By aphæresis,[1] from Renâpe of Virginia *pakähikârė*, 'it is brayed,' an inanimate verbal adjective used substantively as a name for a product obtained by braying.

HOMINY, HOMONY, HOMINI, HOMINE, HOMMONY, OMINI. — A well known food product consisting of Indian corn simply hulled, or of the kernels hulled and coarsely ground and cracked. It was formerly prepared for domestic use in Virginia in what was termed a "hominy block," a successor to, but no great improvement on, the *takwahâk* ('pounding utensil'), or wooden mortar, in which the Indian *krenepo*, or woman, prepared it, and consisting of a block of wood three feet long with a cavity burned in it at one end, wide at the top and narrow at the bottom, so that the action of the pestle threw the corn up the sides, whence it fell to the bottom again. At present, it is manufactured in large quantities by machinery in what are called "hominy mills."

This was unquestionably the first native food that the colonists undertook to prepare for themselves. Although the process of manufacture was very simple and easy, the pronunciation of the Indian name for the article presented difficulties and consumed time; and, as it is a characteristic of man to endeavor to do what he has to do with the least possible exertion, the word of six syllables was, in order to economize effort, shortened to a word of three, which, in one of its forms, that of "homini," was mentioned in print first by Capt. John Smith, in 1630.[2]

The word enters into several compounds: "Hominy grits," in some parts of the country called by the corrupted Narragansett name of *samp*, is corn cracked in particles as small as grains of rice. "Wheaten hominy" is wheat hulled and finely crushed. "Lye

[1] Many notable examples of the application of the "law of least exertion" in the way of shortening words by aphæresis are found in the Renâpe dialects; and it is possible that the Indians themselves finally abbreviated the word under consideration. John Banister, who resided near Jamestown, says, in a communication to John Ray about the middle of the seventeenth century: "Ex similitudine quam habet cum suo lacte Juglandium, Indi lac nostrum *Hickery* vocant." — Ray, *Hist. Plantarum*, II, p. 1915 (1688).

[2] "Their servants commonly feed upon Milke Homini, which is bruized Indian corne pounded and boiled thicke, and milke for the sauce."— Smith, *True Travels, Adventures and Observations*, p. 43 (1630).

hominy" is corn of which the hull has been removed by steeping the kernel in weak lye. In entomology, "hominy beater" is a name for a species of spring-beetle (*Elater*). The size of the grains into which corn is cracked in the manufacture of the material has given rise to the simile "as coarse as hominy." "Hog and hominy" is a common metaphor for pork and Indian corn,[1] the standard dish of early settlers in Virginia. (2) A porridge prepared from corn treated as above described by boiling it in milk or water.

ETYMOLOGY: From Renâpe of Virginia *ûsĕkutehemĕn*, 'crushed by pounding.' This word, corrupted to *usketehamun*,[2] *uskatahomen*, etc., was soon abbreviated to the verbal suffix *hamun*, *homen*, *homin*, etc., by the colonists, who, by the addition of a vowel (as in "rockahominy" for *rokĕhamĕn*, and "monohominy" for *mănăhamĕn*), formed such terms as *hamuni*, *homeni*, *homini*, etc.

HUSKANAWING. — An ordeal to which certain promising young Virginia Indians were submitted, upon reaching the age of virility, as an initiation into a new state of life, that of manhood, and for the purpose of rendering them oblivious to every event of the preceding state of adolescence, and of preparing their mind for the reception of new impressions. The candidates selected by the Elders for such initiation were sent to the woods in charge of a custodian, and, after having been confined in a lodge constructed of saplings, were deprived of food and dosed with *wisákan* (meaning 'it is bitter'; an inanimate verbal adjective used substantively), an infusion or a decoction of the fresh roots of the spreading dogbane or American ipecac (*Apocynum androsæmifolium*),[3] medicinally a

[1] "'Hog and hommony' were proverbial for the dish of which they were component parts."— Kercheval, *Hist. of the Valley of Virginia*, p. 384 (1833).

[2] "The growtes and broken pieces of the corne remayning [after braying] they likewise preserve, and by fannying away the branne or husks in a platter or in the wynd, they lett boyle in an earthen pott three or four howres, and thereof make a straung thick pottage which they call *Vsketehamun*:" — Strachey, *Hist. of Trauaile into Virginia* (1616). "*Vskatahomen*, corne brused and boyled." "Meale made of gynny wheat [Indian corn] called *vsketehamũ*." — Strachey, *Dictionarie*, loc. cit.

[3] *Wisákan* was noticed first by Gabriel Archer (in May, 1607), who mistook the plant for the bloodwort (*Erythræa Centaurium*) of England, as did also the colonists of Massachusetts, the Indians of which used it for the same initiatory purposes as did those of Virginia. According to Smith, the natives of Virginia made themselves sick every spring by copious draughts of the juice of the root mixed with water, which purged them so violently that they did not recover from the effects of its action until three or four days afterward. The root was used by them also as a vulnerary.

very active plant which was highly valued by the Southern Indians, and the extremely bitter, nauseous, milky root of which possesses emetic properties of about two-thirds the strength of the officinal ipecac. The effect of this treatment was to render the subjects of it delirious and to cause them temporarily to forget everything that had passed in their life. Thus, says Beverley, they unlived their former life and began as men (prepared to exercise the function of priest and cockarouse) by forgetting that they had ever been boys. The last case of the practise of huskanawing on record is said to have occurred among the Appomatox Indians in 1690.[1] "Huskanawed," an expression used of a person who looks as if he had been submitted to the action of an emetic.[2] "Huskanaw" (vb.), to submit a person to the process of huskanawing.

ETYMOLOGY: Formed, with the English participial suffix *-ing*, from Renâpe of Virginia *huskinaweu*, an aspirated form of *uskinaweu*, 'he has a new body'; said of a youth who had reached the age of virility.

MACOCK, MAYCOCK. — A general name among the English settlers in Virginia for several varieties of the pumpkin and squash (*Cucurbita Pepo*), called also "macock gourds."[3] According to Prof. Schele Devere (*Americanisms*, p. 60), the name, in the form "maycock," still survives.

ETYMOLOGY: From Renâpe of Virginia *mäkäk* or *mä'kâkw* (Minsi *mächgachk*, pumpkin), an Algonquian name, with slight changes according to dialect, for a hollow receptacle, such as a bark box, tub, or barrel (Menomini *machkak*, Ojibwe *mäkäk*, *mûkûk*, Fox *mä'kä'kw'*, Cree *mäkäk*, etc.); applied by the Renâpe to certain cucurbits which they had in cultivation before the advent of the English because, through the ultimate drying of the pulp and flesh and hardening of the rind, they afforded, after removal of the contents, hollow shells for rattles and vessels for hold-

[1] ". *Huskanawing* is commonly practis'd once every fourteen or sixteen Years, or oftener as their young Men happen to grow up." — Beverley, *Hist. of Virginia*, bk. III, p. 39 (1705). "*Huskanawing*, a Solemnity practised by the Virginia Indians." — Bailey, *Etymolog. Engl. Dict.* (1735).

[2] "He [Luzerne] is a good man, too, but so much out of his element, that he has the air of one huskanoyed." — Thos. Jefferson, in a letter to Jas. Madison (1788).

[3] "*Macóquer* [pl.] according to severall formes called by vs Pompions, Mellions, and Gourdes." — Hariot, *Briefe and True Relation of . . . Virginia*, p. 14 (1590). "A fruit like vnto a musk millon but lesse and worse; which they call *Macocks*." — Smith, *Map of Virginia*, p. 17 (1612). ". . . Symnels, Maycocks and Horns like Cucumbers." — Plantagenet, *Descrip. of Prov. of New Albion*, p. 28 (1648).

ing liquids. The calabash, or gourd properly so called (*Lagenaria vulgaris*), was unknown to the Indians of Virginia before its introduction by Europeans.

MATCH-COAT, MATCHCOAT. — A loose winter mantle worn by the better class of Southern Indians (both male and female), made of the skin of a deer or of other animals, dressed with the hair on, the edges, for the sake of ornament, cut into narrow strips or strings (*räsawänär*) forming a fringe, and the back embroidered with figures of beasts, birds, etc., in white shells or shell beads (*râr̆nawok*),[1] or beads of copper (*mınsär*); or, when the hair was worn inward, decorated with figures in color. This garment, when worn by men, was sometimes thrown over the left shoulder and secured around the body in such a way as to afford the right arm full liberty. It descended to, or below, the knees, and was occasionally lined with the fur of animals other than the one of which it was made. But fashions change, and a little more than a century after the settlement of Jamestown the Indians were wearing a mantle of plain deer-skin provided with holes near the shoulder through which to put their arms — an idea evidently suggested by the European coat.

"Feather matchcoat." The variety of mantle so called was designated by the Indians, according to dialect, as a *kawäsou* or *pûtawûs*. "We have seene some," says William Strachey, "use mantells made both of Turkey feathers and other fowle, prettily wrought and woven with threeds [so] that nothing could be discerned but the feathers, which were exceeding warme and very handsome." Again, in an account of a visit that he paid to the wife of the ex-wirowance of Tapehanek, he says: "her mayd fetcht her a mantell, which they call puttawus, which is like a side cloake, made of blew feathers, so arteficyally and thick sowed togither, that it seemed like a deepe purple satten and is very smooth and sleeke." According to Lawson, these feather mantles were worn by men as well as women.

After the introduction of the material by the British traders, the Indian mantle was made also of a coarse white, blue, or red woolen fabric known as "Match Cloth," an Indian-English name, but now

[1] See the illustration of "Pohatan, King of Virginia's habit" (pl. v), accompanying Mr Bushnell's article in this number.

seemingly understood to mean a cloth made to match the skins which it was designed to supersede.

ETYMOLOGY: From Renâpe of Virginia *Mätsh'kor*,[1] a garment made of skin, and, by a metaphor, the skin of which it was made; from *mätshi*, 'bad,' 'unpleasant,' and *kor*, a word of uncertain origin, but perhaps, from its general meaning of 'covering,' an apocopated form of the old Algonquian word *kora*, 'skin,' 'robe,' 'vestment,' etc. The garment was characterized as bad, unpleasant, or disagreeble because it was more or less of an encumbrance to the wearers, whose sole article of apparel in all seasons except that of winter was a finely dressed piece of deerskin secured around the waist and caught up at the sides so as to form two wide, handsomely fringed flaps that covered the middle part of the body before and behind. After the advent of the English, the name was applied to garments of European material and pattern. The colonists changed the word *kor* of the Indian vocable to "coat" to give it a significance in English, and thus produced the hybrid word *matchcoat*.[2]

MAYPOP, MAY-POP; earlier MAYCOCK.[3] The fruit of *Passiflora incarnata*, a yellow berry about the size of a hen's egg, containing a juicy pulp of an agreeable acidulous taste, and much esteemed by the Virginia Indians, who cultivated the plant for the sake of it. "In every field where the Indians plant their corne," says William Strachey, "be cart-loads of them."

ETYMOLOGY: *Maypop*[4] is a corruption of *Maycock*, a word of unknown meaning, first mentioned in the beginning of the 18th century. It may be, through syncope, from *maracock* (*märäkäk*),[5] the Renâpe name

[1] "*Matchcores*. Skins or garments." — Smith, Vocab. in *Map of Virginia* (1612). "Matchkore, *a stags skyn*." — Strachey, Dict. in *Hist. of Trauaile into Virginia* (1616).

[2] "He threw off his *Match coat* (or upper covering of skin)." — Norwood, *Voyage to Virginia*, p. 36 (1649). "The proper *Indian* Match-Coat . . . is made of Skins drest with the Fur on, sewed together, and worn with the Fur inwards, having the Edges also gashed for Beauty Sake." — Beverley, *Hist. of Virginia*, bk. III, p. 5 (1705). "Their Feather Match-Coats are very pretty." —Lawson, *A New Voyage to Carolina*, p. 191 (1709).

[3] "The Maycock bears a glorious Flower, and Apple of an agreeable Sweet mixt with an acid Taste."— Lawson, *A New Voyage to Carolina*, p. 95 (1709). "Granadillas, Maycocks, Maracocks, Passiflora incarnata."—Jefferson, *Notes on Virginia*, p. 63 (1785).

[4] "Fruit called *maypops*."— Gray, *Man. of Bot.*, p. 194.

[5] "A fruit that the Inhabitants call *Maracocks*." — Smith, *Map of Virginia*, p. 12 (1612). "They plant also the field apple, the maracock, a wyld fruit like a kind of pomegranatt." — Strachey, *Hist. of Trauaile into Virginia* (1616). "*Maracock*. . . . A plant of the genus *Passiflora*."—Webster, *Dictionary* (1858).

of the fruit, which, with the last edition of Webster, ceased to be a dictionary word. Gray and Trumbull (in *Amer. Jour. Sci.*, XXV, p. 130) remark that as our *P. incarnata* is so like the *P. edulis* of Brazil that botanists have been unable clearly to distinguish between the two, we may infer that the fruit and its name were originally derived from the same South American source. According to this view, the Renâpe name *märäkäk* would be ultimately from Tupi (Lingoa geral) *marakuja* or *murukuja*, which was adopted in the form of *merécoya* by the Caribs of the Lesser Antilles, by way of which the fruit, with its Tupi-Carib name, would have reached the country of the Southern Algonquians. The objection to such an inference is that the Carib *merécoya* is not the fruit of *P. edulis*, but the narcotic berry of a passion-flower-vine of a different genus and species, viz. *Murucuia ocellata*.

MOCCASIN, MOCCASON, MOCCASSIN, MOCASSIN, MOCKASIN, MOGGIZON. — The name of the shoe worn by the Algonquians, and, by extension, a term for the foot-covering used by American Indians of other stocks or families. The first mention of the word in print was made by Capt. John Smith in 1612.[1]

The Virginia moccasin was made of a single piece of tanned[2] deer-skin with a gathering seam along the top of the foot, and another at the heel, leaving the bottom seamless. Flaps were usually (though not always) left on each side to reach a few inches up the leg, and these were tied over the ankle and to the lower part of the leg by thongs of deer-skin called by the colonists "whangs"; or else were provided with drawing strings, which drew the skin together like a purse on the top of the foot, and were tied around the ankle. The moccasin was worn mostly in winter, when it was usually well stuffed with deer-hair or dry leaves in order to keep the feet comfortably warm. Sometimes in cold weather (or in warm weather when the men went hunting or the women fruit or mat-material gathering) the Indians wore, in addition to moccasins, a pair of deer-skin leggings (*kâkwowänär*), called by the colonists

[1] "*Mockasins*, Shooes." — Smith, Vocab. in *Map of Virginia* (1612). "The *Indian* Name of this kind of shoe is *Maccasin*."—Beverley, *Hist. of Virginia*, bk. III, p. 3 (1705). "Some make *Moccasons* or leather Purses for their Feet."—Jones, *The Present State of Virginia*, p. 10 (1724).

[2] "According to John Lawson, the Southern Indians, like some of those at the North, used the brain of the deer for tanning their deer skins; and sometimes also corn "in the milk" beaten to a pulp.

"stockings," secured at the knee to a sort of trunk-hose of the same material, which was tied about the waist.

A strip of the silicious culm of the cane (*Arundinaria macrosperma*), with an edge ground almost as sharp as that of a razor, furnished the knife (*rĭkäskw*) to shape the moccasin leather; a small bone near the ankle-joint of the deer provided the awl or needle (*pokohâk*); and the sinews of the animal split into filaments and twisted by the women between the hand and thigh supplied the thread (*pĕmĕnätân*). (2) A Virginia Indian name for the stemless lady's-slipper, *Cypripedium acaule*,[1] adopted by the whites and since extended, in combination with the word *flower*, and with various attributives, to other species of the genus. (3) A name for several kinds of serpents: *Natrix fasciata*, *Ancistrodon contortrix*, *Toxicophis atrofuscus* and *T. piscivorus*,[2] the cotton-mouth, the species originally so called, and said to be the ugliest snake in North America. By the negroes of South Carolina and elsewhere, every water-snake is called a "moccasin." From this metaphorical application of the name to snakes (the reason for which is not apparent), is perhaps due the South Carolina locution "to be moccasined," in the slang sense of "to see snakes," that is, to be intoxicated.

The word has entered into several compounds besides that of "moccasin flower," such as: "Moccasin embroidery," a kind of needle-work executed with a species of grass by several Indian tribes; "moccasin fish", a name in Maryland for the sun-fish (*Pomotis vulgaris*); and "moccasin game", a game of chance played by the Ojibwe and Menomini.

(4) "Moccasined" (adj.). Shod with moccasins.

ETYMOLOGY: From Renâpe *mäkäsĭn*, a radical word with cognates in nearly every Algonquian dialect.

NONDO. — A name in Virginia for *Ligusticum actæifolium*, an umbelliferous plant, called also angelico, which was cultivated by the Southern Indians for the sake of its large aromatic root, which was used by them for boiling with their meat and other food in

[1] "They call it the *moccasin* flower, which also signifies, in their language, *shoe* or slipper." — Catesby, *Nat. Hist. Canada, Florida*, etc., II, append., p. 3 (1745). "*Moccasine* [*C. acaule*]."—Clayton, *Flora Virginica*, p. 40 (1762).

[2] "There is another snake in Carolina and Florida, called the moccasin."—Bartram, *Travels in N. America*, p. 269 (1791).

order to give it an agreeable flavor; hence the Renâpe name, on Roanoke island, of *habo"sikan*, 'used with what is boiled.'

ETYMOLOGY: From Renâpe of Virginia *wo"deu*, 'it is boiled'; pronounced *wo"do*, and corrupted to "nondo."[1]

OPOSSUM, OPUSSUM, OPASSOM; earlier APOSSUME, APOSSOUN, POSSOWN, PASSOUNE, POSSUM. — A North American marsupial, *Didelphys Virginiana*, about the size of the domestic cat, with grayish-white hair; with face pure white near the snout; and with black ears. When captured or slightly wounded, it has the habit of feigning death, and, by this artifice, often escapes from the inexperienced hunter.

The name, which was first mentioned in a brief account of Virginia published in 1610,[2] has, with various adjuncts, since been extended to species of the genera *Sarcophilus*, *Thylacinus*, *Belideas*, *Micoureus*, *Chironectes*, and *Acrobates*. The name enters into several compounds, as: "Opossum mouse," *Acrobates pygmæus*, a pygmy species of opossum of New South Wales; "opossum rug," a commercial name for the skin of an Australian species of *Phalanger*; "opossum shrew," an insectivorous mammal of the genus *Soledon*; "opossum shrimp," a crustacean, the female of which carries its eggs in pouches between its legs.

"Possum," the common aphæretic form of the name, is often used as an epithet with the meaning of "false," "deceptive," "imitative," as in the name "possum haw" (*Viburnum nudum*), the berries of which counterfeit the edible fruit of the black haw (*V. prunifolium*), but differ therefrom in being very insipid; and "possum oak" (*Quercus aquatica*), from the deceptive character of its leaves, which vary in shape and size and often imitate those of *Q. imbricaria*, and thus lead to a confusion between the two species. Used as a verb, the word means "to pretend," "feign," "dissemble,"

[1] "Called Nondo in Virginia:"—Bartram, *Travels in N. America*, p. 45 (1791). "*L. acteifolium* . . . (*Nondo. Angelico*)."—Gray, *Man. of Botany* (1858).

[2] "There are Arocouns and Apossouns, in shape like pigges shrowded in hollow roots of trees."—*A True Declaration of Virginia*, p. 29 (1610). "An *Opassom* hath a head like a Swine, and a taile like a Rat:"—Smith, *Map of Virginia*, p. 14 (1612). "*Apossumes* of the bignesse and likenesse of a Pigge of a moneth ould:"—Hamor, *A True Discourse of the Present Estate of Virginia*, p. 20 (1615). "An *Opossum* as big and something shaped like our Badgers."—Clayton, *Virginia*, p. 36 (1688).

this sense, as well as that of the attributive, being derived from the animal's habit of throwing itself upon its back and feigning death upon the approach of an enemy; whence the expression "playing possum" or "possuming."

The flesh of the opossum, which is white and well flavored, was eaten by the Virginia Indians, but its fur was not esteemed and was used only for making girdles. (2) The "opossum" of English-speaking people of the West Indies and South America is *Didelphys Opossum*, the *manitu* of the Caribs and *sarigueia* of the Tupi.

ETYMOLOGY: From Renâpe of Virginia *âpäsûm*, 'white beast'; an aphæretic and dialectic form of *wâpäsûm*.

PERSIMMON, PERSIMON (*vulgo* SIMMON); earlier PARSIMENA, PARSIMON, POSIMON. — The berry of *Diospyros virginiana*, of the Ebenaceæ, or Ebony Family. This fruit, which resembles a yellow plum, but is globular and about an inch in diameter, is exceedingly austere and astringent before maturity, and, as Captain John Smith (who was the first to notice it, under the name of *putchamin*)[1] observes, draws "a man's mouth awry with much torment"; but, in the fall, after it has been bletted and softened by the frost, becomes sweet and fine flavored. In the South, the fruit remains adherent to the branches long after the leaves have been shed (a fact to which the name mentioned by Smith alludes)[2], and, when it falls to the ground, is eagerly devoured by wild and domestic animals. It was much esteemed by the Virginia Indians, who preserved it by drying it upon mats spread upon frames or barbecues. It is from the berries in the form of prunes that the name, after undergoing many vicissitudes of spelling, has been handed down to us, that probably being the condition in which the fruit was locally first seen, by the English settlers, in use among the Indians. The

[1] ". . . . The other [plums], which they call *Futchamins*, grow as high as a palmata; the fruit is like a medlar:"— Smith, *Map of Virginia*, p. 11 (1612).

[2] *Pûtchamîn*, or *ptchämĕn*, 'persistent fruit.'

[3] "There are Cedars, Cypresses and Sassafras, with wilde fruits, pears, wilde cherries and the dainty Parsemenas."— Plantagenet, *Descrip. of Prov. of New Albion*, p. 23 (1648). "The fruits natural to the island are Mulberries, Posimons, Grapes:"— Denton, *A Brief Account of New York*, p. 3 (1670). "These *Persimmons* amongst them retain their *Indian* Name."— Beverley, *Hist. of Virginia*, bk. II, p. 14 (1705). "In the choicest Part of this Land grow *Parsimon* Trees:"— Tailfer, *A True and Hist. Narrat. of the Col. of Georgia*, p. 68 (1741).

name of the fruit in a fresh or growing state (*putchamin* or *pitchamin*) became obsolete at the beginning of the third quarter of the 18th century. The fruit is used in the South for making a beverage called "persimmon (or simmon) beer," which is much liked by country folk.[1] "Persimmon wine" is a spirituous liquor obtained by distilling persimmon beer.

"Huckleberry above the persimmon" is a Southern phrase meaning to excel (Bartlett). "To rake up the persimmons" is a Southern gambling term for pocketing the stakes, or gathering in the "chips." "The longest pole knocks down the most simmons" is a Southern adage meaning that the strongest party gains the day. "That's persimmons" is a Southernism for "that's fine."

The hard flat seeds of the persimmon were used by the Southern Renâpe in playing their *mamantuwâkan*, or dice game.

ETYMOLOGY: An apocopated form of Renâpe *pasĭmēnan*, 'dried fruit,' i. e., fruit dried artificially; from *pasĭmēneu*, 'he (or she) dries fruit.' Fruit dried spontaneously would be *pasĭmēn*, 'dry fruit.' The word is cognate with Nipissing *pasĭmĭnan*, a name in that dialect for a raisin or a dried huckleberry; Cree *pasĭmĭnan*, a name for any fruit dried artifically.

The epenthetic *r* is due to the long vowel of the root, as in *carcajou* for câcajou; *sagamore* for sagimâ; English *lawr* for law, etc.

POAQUESSON, POQUOSEN, POQUOSON, POCOSON, POCASON, PERKOSON. — A name applied in eastern Maryland, Virginia, and North Carolina to a low wooded ground or swamp, which is covered with shallow water in winter and remains in a miry condition in summer.[2] Some of these swamps in North Carolina, such as the "Holly Shelter Pocoson," are forty miles in length, and overgrown with great bodies of valuable timber trees, rendered inaccessible to the outer world by reason of overflow and the perpetual miry state of the ground. The name is applied also to a reclaimed swamp.

[1] "Here were Virginia slaves, dancing jigs and clapping Juber, over a barrel of persimmon beer, to the notes of the banjo."— Jones, *Southern Sketches*, p. 98.

[2] "The first night, we lay in a rich *Perkosen*, or low Ground:"— Lawson, *A New Voyage to Carolina*, p. 57 (1709). "There we were stopped by a miry pocoson full half a mile in length."— Byrd, *Hist. of the Dividing Line*, p. 15 (1728). "These swamps are locally known . . . as 'dismals' or 'pocasins.'"— Whitney in *Encyclop. Brit.*, XIII, p. 809, 1888.

The word, slightly misspelled and combined with another misspelled word, by a typographical blunder, is mentioned for the first time in the vocabulary appended to Strachey's *Historie of Trauaile into Virginia* (1616).

ETYMOLOGY: From Renâpe of Virginia, *pâkwĕsĕn*, 'it is but slightly watered,' or, more accurately, 'it is *put* in a condition of scant water.' An inanimate verbal adjective used substantively as a designation for a place covered with shallow water. From the root *pâkw*, 'to be dryish,' 'to have little water,' + the inan. verbal adjective suffix *-sĕn*, denoting that the object qualified is *put* or *laid* in the condition expressed by the root.

POKE, POKAN. — A popular name for *Phytolacca decandra*, a widely distributed and well-known plant, called also "Virginia poke," "pokeweed," "pokeroot," etc., the dark purple berries of which contain a crimson juice, which the Indian women used as a stain for their mats and basketry. The color is evanescent, however, and soon changes to a dirty brown, although, with urine as a mordant, it becomes a fixed blue dye.

ETYMOLOGY: *Poke*[1] is an apocopated form of *pokan*,[2] a variant of *pă'kon*. See *Puccoon*.

PONE. — Among the Virginia Indians, a ball or flat round cake made of a paste of corn-meal and hot water, covered with hot ashes in a fire-bed until baked, and then immediately dipped in water to cleanse it, and afterward allowed to dry by its own heat;[3] or, a similar cake or ball made of flour obtained from certain edible roots and seeds, and sometimes "buttered" with deer's suet (*rûnga*).[4] (2) A kind of bread or cake made of corn-meal, milk, and eggs, and baked in a tin pan; called also "corn pone." (3) "Sweet-potato-pone," a kind of cake made by grating sweet potatoes,

[1] "Poke, Phytolacca decandra." — Jefferson, *Notes on Virginia*, p. 66 (1785).

[2] "*Phytolacca decandra*, Poke, Pokan of Virginia Tribes." — Rafinesque, *Med. Flora of U. S.*, II, p. 251 (1830).

[3] See Smith's *Map of Virginia*, p. 17, where the bread is called *ponap*, a misprint for *ponak*, plural of *pon*. "We made a good provision of *Pone* to bait on by the way." — Norwood, *Voyage to Virginia*, p. 47 (1649). "Their [the poor people's] constant bread is *Pone*, not so-called from the Latin *Panis*, but from the *Indian* name *Oppone*." — Beverley, *Hist. of Virginia*, bk. IV, pp. 55–56 (1705).

[4] The cake or ball was sometimes put into a pot and boiled, and afterward laid upon a smooth stone and allowed to harden.

expressing the juice, mixing the residue with sugar and spices, and baking in a tin pan. "Better than pone and molasses" is a homely simile used in reference to a thing considered superlatively good.

ETYMOLOGY: An aphæretic form of Virginia Renâpe *äpân*, 'baked'; not a past participle, but a substantive of regular formation (by change of verbal suffix *-eu* to nominal suffix *-ân*) from *äpeu* 'she bakes.' Cognate with Middle Lenâpe *äpân*, Minsi *ächpân*, and Abnaki *äba"n*.

PUCCOON, PUCKOON; earlier spelling, POHCOON, POUGHKONE, POCONE. — A popular name for *Lithospermum vulgare*, the root of which (the part to which the Indian name was applied) contains a red coloring matter which the Virginia Indians extracted from it by powdering it in a mortar, after desiccation, and then mixed with acorn or hickory-nut oil or bear's-grease. The pigment thus formed was used for painting their head and shoulders[1] and decorating their skin garments, for anointing their joints, for reducing swellings, for assuaging pain, and for protecting them against heat in summer and cold in winter. "They account it [the root]," says Captain Smith, "very pretious and of much worth." Upon passing one of their "royal tombs," or "temples" (*kwaiokosonâk*) on their way up and down the river, "they solemnly cast some pieces of copper, white beads or *Pocones* into the river, for fear their *Oke* [their god, the devil] should be offended and revenged of them." Their conjurers, too, for the purpose of quelling a storm, cast this root, along with tobacco and copper, "after many hellish outcryes and invocations," into the river to appease their god, of whose great wrath they believed the storm to be a manifestation. (2) *Sanguinaria canadensis*, blood-root or Indian paint, sometimes called, by way of distinction, "red puccoon," and in West Virginia and southwestern Virginia, "'coon-root"; a plant with a thick rootstock surcharged with an acrid red-orange juice, which was used by the Indians for staining their pelts, mats, basketry, etc., and, mixed with oil or bear's grease, for painting their body and head.[2] (3) *Hydrastis cana-*

[1] "Their heads and shoulders are painted red with the roote of *Pocone* braied to powder and mixed with oyle." — Smith, *Map of Virginia*, p. 21 (1612). "The *Indians* also pulverize the Roots of a kind of *Anchuse* or yellow *Alkanet*, which they call *Puccoon*." — Beverley, *Hist. of Virginia*, bk. III, p. 52 (1705).

[2] "At their going on enterprizes of war they dress in their greatest gallantry, daubing their hair with bear's-fat and the juice of the *puckoon*-root." — Catesby, *Nat. Hist. of Canada, Florida*, etc., I, p. ix (1754). "*Puccoon* [*Sanguinaria*]." — Clayton, *Flora Virginica*, p. 80 (1762).

densis, distinguished as "yellow puccoon," and containing a juice of a brilliant yellow color which was used by the Indians for staining their pelts, etc.[1]

ETYMOLOGY: From Renâpe of Virginia *pä'kon*:[2] from the same root (*pä'k, păch, păg*) as an Algonquian name for blood.

RACOON, RACCOON, RACKOON (*vulgo* COON); earlier, AROCOUN, ARACHKONE, ARACOUNE, ARRAHACOUN.—A well known quadruped, *Procyon lotor*, of the Ursidæ, or Bear Family, esteemed alike for its flesh and its pelt, which was one of the skins used by the Southern Indians for making their loose winter mantles, or matchcoats. One of these, styled by Smith a "couering of *Rahaughcums*,"[3] invested the person of Powhatan when the Captain, in January, 1608, was presented as a prisoner at the "court" of the "emperor" at Wirowocomoco. The first mention of the name in a recognizable form, that of *arocoun*,[4] was made in 1610, and the second, in that of *aroughcun*,[5] in 1612.

The most widely known name of the animal among the Algonquians, however, is *esiban* or *esipan*, or variants thereof,[4] meaning the "ex-shellfish," or the "shellfish that was"; and, to account for it, a widespread Algonquian fable ascribes the origin of the animal, through a process of evolution, from a mollusk, which, according to some native scholiasts, was the oyster. The animal, which is nocturnal in its habits, sleeps in the daytime in some hollow tree, during the successive climbings of which to seek its abode, the sharp nails with which its forepaws are provided leave long scratches upon the bark. Such a tree is hence called by the Indians by a name signifying 'raccoon tree.' According to Abbé Cuoq, the Nipissing humorously say of a man who has had a misunderstanding

[1] The rootstocks of *Xanthorrhiza apiifolia*, the yellow-root, were also employed by the Southern Indians as a yellow dye.

[2] The present pronunciation of the word is due to the old spelling, in which the doubling of the *o* in the last syllable was an orthoepic expedient to denote that the vowel had a long sound.

[3] ". . . their Emperour . . . couered with a great Couering of Rahaughcums:"—Smith, *Trve Relation of Virginia* (1608).

[4] "There are Arocouns and Apossouns, in shape like pigges, shrowded in hollow roots of trees."—*A Trve Declaration of the Estate of Virginia*, p. 29 (1610).

[5] "There is a beast they call *Aroughcun*, much like a badger, but useth to live on trees as squirrels doe."—Smith, *Map of Virginia*, p. 13 (1612).

with his squaw and bears the mark of her finger-nails on his face: *o ki esipanatikonan*, 'she has made a raccoon-tree of him.'

It was from such tree-scratching custom that the animal received from the Virginia Indians the name by which, in a slightly altered form, it is universally known to English-speaking people.

The name is sometimes applied in British Guiana to the coatimondi (*Nasua fusca*), and, along with its aphæretic form of "coon" (which also is a humorous name for a negro, and, in 1844, was a nickname applied to members of the Whig party, which adopted the raccoon as an emblem), enters into several combinations, as: "Raccoon-berry," the fruit of *Podophyllum peltatum* and *Symphoricarpus racemosus*, on which the animal feeds; "raccoon dog," a kind of dog (*Nyctereutes procyonoides*) of Japan and China; "raccoon grape," a species of grape (*Vitis æstivalis*) of which the animal, and his relative the bear, is very fond; "raccoon (or coon) oyster," a small southern variety of the mollusk on which the animal subsists when vegetable food is scarce; "raccoon perch," the yellow perch (*Perca flavescens*), the dark bands upon the sides of which bear a remote resemblance to those of a raccoon's tail; "coon bear," a large carnivore of Tibet; and "coon-heel," a name in Connecticut for a long slender oyster.

In the presidential campaign of 1844, "Coonery" was a derogative synonym for Whiggery or Whiggism, meaning the doctrines of the Whig party.

The animal has the reputation of being very knowing; hence the simile "as sly as a coon," and the metaphor "he is an old coon" said of a person who is very shrewd. Finally, "to coon" is to creep, cling close, to creep as a coon along a branch; a "gone coon" is a person whose case is hopeless; and a "coon's age" is a Southern figurative expression meaning a long time; while to be "as forlorn as an unmated coon" is to be very wretched indeed.

ETYMOLOGY: From Renâpe of Virginia *ärä'kun*, an apocopated form of *ärä'kunĕm*, 'he scratches with the hands.'[1]

[1] The fore paws of quadrupeds and the feet of large birds are called 'hands' by the Algonquians. The Lenâpe name for the turkey, for example, is *tshikénûm*, 'he scrapes with the hands,' and one of the names of the raccoon among the same Indians is *wtakĕ-ântshen*, 'he has soft hands.'

ROANOKE, ROANOAKE, RONOAK, ROENOKE, ROENOAK; earlier, RAWRANOKE, RAWRENOCK. — Small discoidal white beads made from sea shells and pierced in the center, strung and used by the Virginia Indians as money [1] and as ornaments for the person. The first mention of these was made by Smith in 1612, under the name of *rawrenock*,[2] and, by the same writer, twelve years later, under that of *rawranoke*,[3] which, apparently, is a syncopated plural of *rarenaw*, a word defined by William Strachey as a 'chain' (i. e., a 'string' of beads), but which more probably meant a 'bead' of a chain. The word, which fell into disuse with the disappearance of the Indian, still finds a place in dictionaries.

(The word *Peak* used in Virginia in the early part of the eighteenth century as a name for shell money in the form of cylindrical beads was borrowed from coastwise traders from the North, and consists of the last two syllables of the Massachusetts word *wampampeag* (*wa"pa"piag*), 'white strings.' The division of the word by the English colonists produced the two absolutely meaningless vocables *wampam* or *wampum* and *peag*).[4]

ETYMOLOGY: A word of uncertain meaning; but perhaps, as above suggested, from Renâpe *râr̆ênawok*, plural of *râr̆ênaw*. Provided the Southern Renâpe secondary radical *-naw*, 'body,' had the meaning also of 'shell,' 'rind,' as had the Abnaki, Narragansett, Massachusetts, and Middle States Lenâpe secondary radical *-hak*, the word *râr̆ênawok* would mean 'smoothed shells'; from the root *râr*, 'to be smoothed,' 'polished,' 'r bbed,' 'abraded.' The word was early confused with *Roanoke*,[5] an

[1] "*Roanoake* (a small kinde of beades) made of oyster shels, which they vse and passe one to another as we doe money (a cubites length valuing six pence)."— Hamor, *A True Discourse of the Present Estate of Virginia*, p. 41 (1615).

[2] ". . . *Mowchik rawrenock* ['many beads']": — Smith, Vocab. in *Map of Virginia* (1612).

[3] ". . . *Rawranoke* or white beads:"— Smith, *Gen. Hist. of Virginia*, lib. 3, p. 58 (1624).

[4] "They valued . . . *Peak* and *Roenoke* for Ornament." — Beverley, *Hist. of Virginia*, bk. III, p. 56 (1705). "This peak consists of small cylinders cut out of a conch shell, drilled through and strung like beads." — Byrd, *Hist. of the Dividing Line*, p. 35 (1728).

[5] The name of the island (*Roanoak*, as phonetically spelled by Ralph Lane) was that of its Renâpe inhabitants, the *Rowanok*, or 'Northerners,' so-called probably because they and their congeners of Virginia originally came down from the country beyond the Ohio river.

island name which had become familiar to the English long before the settlement of Jamestown.

ROCKAHOMINY, ROCKAHOMINIE, ROCKAHOMINE. — An Indian food preparation (the "cold flour" of Western hunters), used under different names (*psitamun*, *nuk'hik*, *yok'hig*, *rok'hig*, *pinole*, *tiste*, etc.) from Canada to Peru, and made of parched corn (called by the Virginia Renâpe *äpärumĕnan*, 'parched grain') pounded into a very fine powder. At the North, maple sugar is sometimes mixed with it, and, in Texas, powdered mesquite beans, while still farther south chocolate and cane sugar enter into its composition. This preparation is carried in a skin bag or pouch by the hunter, who is able to subsist upon it solely for several days at a time. It was formerly the principal food of Indian war parties going on distant expeditions, its bulk being reduced to the smallest possible compass, and it being so light that the Indians could, without inconvenience, carry a supply sufficient for a long journey. Under the name of *mashika*, it forms an important part of the rations furnished to the soldiers of the Peruvian army.

ETYMOLOGY: From Renâpe *rokĕhamĕn*,[1] 'softened,' + an excrescent vowel due to English-speaking people.

TERRAPIN, TERRAPEN, TERRAPINE, TERREBIN, TERAPIN, TARAPIN, TURAPIN, TURPIN; earlier, TOROPE. — Originally, in the uncorrupted form, a general name for turtles inhabiting water — fresh or salt; specifically, in the present spelling, the *Malacoclemmys palustris*, a small turtle living in salt water in the vicinity of marshes from Long Island sound to Texas, and regarded as one of the greatest delicacies of the American table. Of this species, known in Maryland as the "diamond back," Virginia furnishes about one-third of all that are consumed in the United States. The reptile (or "bird" as epicures call it) is now extensively bred for the market in what are called "terrapin farms" (one of which exists on Hog island below Jamestown), which consist of several acres of land and water enclosed by a fence sunk twelve inches in the mud to prevent the

[1] "*Rokohamin*, parched corne grownd small."—Strachey, Dict. in *Hist. of Trauaile into Virginia* (1616). "*Rockahominie*, that is, the finest *Indian* Corn, parched and beaten to Powder."—Beverley, *Hist. of Virginia*, bk. III, p. 18 (1705). ". . . rockahominy . . . is nothing but Indian corn parched without burning, and reduced to powder."—Byrd, *Hist. of the Dividing Line*, p. 70 (1728).

animals from burrowing out. (2) *Pseudemys scabra*, the "yellow-belly," which is caught in large numbers and sent to market, where it masquerades under the name of "terrapin." (3) In common parlance, all the species of the Emydoidæ Family, and, with various qualificatives, a name for many of those of other families of the *Testudinata*. (4) A dish made of terrapin.

The first mention of the Indian name was made in 1613,[1] and the second (in MS.) about 1616, in a misspelled plural form defined by William Strachey as a "sea turtle";[2] after which no chronological bridge intervenes to connect it with its next appearance in 1672,[3] when it had assumed about the same form that it has at present.[4]

ETYMOLOGY: From Renâpe of Virginia *turûpeu*, with a substitution of the English diminutive suffix *-en*, varied to *-in*, *-ine*, for the suffix syllable *-eu*; from the adverbial root *tur*, the meaning of which has been lost, and the verbal suffix *-peu* denoting action in or upon water. The form of the hybrid word was probably suggested by such diminutives as chick*en*, kitt*en*, maid*en*, etc., and the name applied to the small edible species in distinction from the snapping turtle, which also is edible and attains a large size.[5] The Virginia word is cognate with Middle States Lenâpe *tur'peu*, *tul'peu*, and Caniba *turêbe*, and coradicate with Natick *tunûpäs*.

TOMAHAWK, TOMAHAUCK, TOMMYHAWK, TOMAHACK, TOMAHAAK. — A Virginia Indian hatchet consisting of a hard stone in the shape of a wedge or double wedge[6] six or eight inches in length, ground to an edge at the extremity and secured to a wooden handle by means of thongs of deerskin. The instrument, the name of which

[1] I haue caught with mine angle, Pike, Carpe, Eele . . . Crea-fish, and the Torope or little Turtle."—Whitaker, *Good Newes from Virginia*, p. 42 (1613).

[2] "A sea turtle, *tuwcupewk* [for *turrûpewâk*]."—Strachey, *Dictionarie* (1616).

[3] "The Turtle that lives in Lakes and is called in *Virginia* a *Terrapine*."—Josselyn, *New Englands Rarities*, p. 34 (1672).

[4] ". . . a small kind of Turtle (or *Tarapins* as we call them)."—Beverley, *Hist. of Virginia*, bk. III, p. 14 (1705). "Water Terebins are small; containing about as much meat as a Pullet:" — Lawson, *A New Voyage to Carolina*, p. 133 (1709). "We caught a large terrapin in the river, which is one kind of turtle." — Byrd, *Hist. of the Dividing Line*, p. 78 (1728).

[5] A Renâpe verb *turûpen* would be the indefinite form of *turûpeu*, and not applicable as a name for a living being.

[6] "Some use a long stone sharpened at both ends, thrust through a handle of wood . . . and these last they were wont to use instead of hatchets to fell a tree, or to cut any massy thing in sonder." — Smith, *Map of Virginia*, p. 106 (1612).

Capt. John Smith was the first to make known, in 1612,[1] was used not only as a weapon of war,[2] but also for severing logs by repeated blows, as well as for girdling trees preliminary to burning the wood of the trunk in order to cause their downfall.[3] After the introduction of European hatchets of iron, the name was transferred to the latter, and the stone instrument gave way to the metal one. With the Indians, the tomahawk was the emblem of war itself. To bury it, meant peace; to dig it up, meant to declare the most deadly warfare. Hence the phrases "to bury the tomahawk," and "to dig up the tomahawk," sometimes used by writers and public speakers with reference to the settlement of past disputes or the breaking out of new ones. (2) A name erroneously applied by early writers in New England to a war-club, or *casse-tête*, used by the Massachusetts Indians.[4] (3) "Tomahawk" (vb. tr.). To cut or kill with a tomahawk.

"Tomahawk Right." An inferior kind of land title, secured in the early period of the settlement of Virginia, "by deadening a few trees near the head of a spring, and marking the bark of some one or more of them with the initials of the name of the person who made the improvement."[5]

ETYMOLOGY: From Renâpe of Virginia *tämĕhâk*, an apocopated form of *tämĕhâkan*, 'used for cutting,' a cutting utensil, from *tämĕhâkeu*, 'he uses for cutting,' from *tämĕhäm*, 'he cuts.'

TUCKAHOE, TUCKAHO; earlier TUCKAHOW, TUCKAHOO, TUCCAHO, TOCKAWHOUGHE. — One of several vegetable productions used by the Virginia Indians as food: (1) A tuber-like object often turned up by the plow in old fields. It is sometimes round or roundish and often as large as a man's head. It was formerly supposed to be a fungus, and, as such, was described under the name

[1] "*Tomahacks*, Axes." — Smith, Vocab. in *Map of Virginia* (1612).

[2] "The weopons they use for offense are Bowes and Arrowes with a weopon like a hammer and ther *Tomahaucks*." — Spelman, *Relation of Virginia* (about 1613).

[3] "When they wanted any Land to be clear'd of the Woods, they chopp'd a Notch round the Trees quite through the Bark with their Stone Hatchets or *Tomahawks*, and that deadn'd the Trees:" — Beverley, *Hist. of Virginia*, bk. III, p. 61 (1705).

[4] "*Tomahaukes* be staves of two foote and a halfe long, and a knob at one end as round and bigge as a foote-ball." — Wood, *New Englands Prospect*, p. 66 (1634).

[5] Kercheval, *The Valley of Virginia*, p. 327 (1833).

of *Pachyma cocos*, but is now known to be due to a disintegration of the roots of certain trees (mostly coniferous).[1] The interior mass of this production (which was called *okipĕn*, or 'earth tuber,' by the Renâpe of Roanoke island) consists entirely of pectose and has no nutritive value, and was eaten by the natives only when other food was scarce. The negroes of Maryland and Virginia are fond of it, and eat it roasted and seasoned with salt. (2) The thick fleshy rootstock of *Peltandra alba*, the arrow-arum,[2] which after being sliced and dried in the sun or by a fire, or roasted in a fire-pit, in order to dissipate its acridity, was pounded into flour, which (sometimes with the addition of corn-meal and sorrel)was made into bread. (3) The rootstock of *Orontium aquaticum*, the golden club, which was roasted and eaten. (4) The tuber of *Apios tuberosa*, the earth-nut or wild potato.

Metaphorically, the term has been applied to the poor land of lower Virginia and to an inhabitant of it. In colonial days, "Tuckahoe" was a name in Virginia for any one of the settlers living east of the Blue Ridge; while any settler living west of it was called a "Cohee."[4] The Tuckahoes were almost exclusively English immigrants, and the Cohees mainly people of Dutch origin coming down from Pennsylvania. It was not till the Revolutionary war, when both fought for a common cause, that the people of these two sections became amalgamated.

One or another of the vegetable productions mentioned above has given the name of "Tuckahoe" to places in North Carolina, Maryland, New Jersey, and New York.

ETYMOLOGY: From Renâpe *p'tûkweu* (often pronounced *p'tûkweo* or *'tûkweo*), 'it is round' (1) like a ball, (2) like a cylinder; an inani-

[1] "There is a root common in the woods called Tuckaho, the natives eat it for bread:"— Shrigley. *A True Relation of Virginia and Mary-Land*, p. 5 (1669). "Tuckahoe, Lycoperdon tuber."— Jefferson, *Notes on Virginia*, p. 63 (1785).

[2] "The chiefe roote they have for foode is called *Tockawhoughe*."— Smith, *Map of Virginia*, p. 14 (1612). "Out of the Ground they dig . . . a Tuberous Root they call *Tuckahoe*, which while crude is of a very hot and virulent quality; but they can manage it so as, in case of Necessity, to make Bread of it."— Beverley, *Hist. of Virginia*, bk. III, pp. 15–16 (1705).

[3] "*Indians* also eat the earth-nuts, which they call *Tuccaho*."—Catesby, *Nat. Hist. Canada, Florida*, etc., I, p. x (1754).

[4] From the use by these people of the corrupt form "Quo'he" for "Quoth he."

mate verbal adjective used substantively as a name for a round or roundish root employed as food.

WIROWANCE, WEROWANCE, WEROANCE, WYROANS, WYROAUNCE, WIROANS. — In the monarchic form of government of the Virginia Algonquians, (1) an absolute ruler of a town;[1] (2) of several towns constituting a wirowancedom;[2] (3) of several wirowancedoms forming a nation, or a confederacy (such as that of Powhatan), having at its head a great wirowance[3] to whom the wirowancedoms paid tribute and who had the power of appointing or deposing the latter's ruler. When the ruler of a wirowancedom was deposed from "office" he appears to have been allowed to retain, as a retreat, in the country of his former jurisdiction, a small village to which was applied the term *kâsun*, or 'place of concealment' (place of political oblivion, as it were), from *kâsu*, 'he hides himself.' The dignity of wirowance was not elective, or attainable by superior intellect or bravery, but was entirely hereditary, the sons succeeding the father in the order of their birth, and, upon the death of the last son, the succession devolving in the same order on the sons of the wirowance's eldest daughter.[4] In the event of a wirowance's death during the minority of his eldest son, the latter was committed to the care of his mother or of some other relative who acted as regent till the boy's majority. Of such an "infant" in the eyes of the Indian law it was said *tatakopisu*, 'he continues tied,' that is (figuratively), he remains confined to the cradle-board. Owing to the tribute in the way of peltry, shell beads, pearls, copper, etc., constantly paid to them by their people, the wirowances were, from the Indian viewpoint, men of affluence. Notwithstanding this, they were not

[1] "Every small town is a petty kingdom govern'd by an absolute *Monarch* assisted and advised by his *great Men*:" — Jones, *The Present State of Virginia*, p. 8 (1724).

[2] "Sometimes there are general *Emperors*, who have several petty kingdoms in some Measure under their Protection and Power." — Jones, loc. cit.

[3] "The forme of their Common-wealth is a Monarchicall government, one as Emperour ruleth over many Kings or Governours." — Smith, *Gen. Hist. of Virginia*, lib. 2, p. 37 (1624).

[4] *A Relation of Maryland*, p. 30 (1635). Powhatan decreed that, in his case, he should be succeeded by his three brothers in the order of their birth, and, after their death, by his sisters, and then by the heirs, male or female, of his eldest sister

distinguishable by dress or bodily decoration from men of the better class, but only by the great deference shown them.[1]

ETYMOLOGY: From Renâpe of Virginia *wirówa"ts*,[2] contracted from *wirowa"'tĕsu* (and the place of accent changed by compensation), 'he is rich,' or 'exists in affluence.' From *wiro*, 'to be rich,' and the animate verbal adjective suffix *-a"tĕsu* (Menomini *-a"teshu*, Montagnais (Cree) *-âtĭshiu*, Prairie Cree- *âtĭsiu*, Nipissing *-âtĭsi*, Ojibwe *-âd'isi*), denoting a state of being or of existence. The word had been familiar to the leading men among the colonists for several years previous to their arrival in Virginia, and the spelling used by them was adopted from that employed by Thomas Hariot (1590) and Ralph Lane (in Hakluyt, 1600).

NEW YORK CITY.

[1] "The King is not known by any difference from other of y^e^ chefe sort in y^e^ country but only when he cums to any of ther houses they present him with copper Beads or Vitall, and show much reverence to him." — Spelman, *Relation of Virginia* (about 1613).

[2] Indian personal or titulary names were more liable than any other class of words to become apocopated through long and familiar use, "letters, like soldiers," to use the words of Horne Tooke, "being very apt to desert and drop off on a long march."

ABORIGINAL SHELL-HEAPS OF THE MIDDLE ATLANTIC TIDEWATER REGION

By W. H. HOLMES

The Deposits and their Contents

Artificial shell deposits are an important feature of the aboriginal remains of both Americas. They are the kitchen-middens of mollusk-consuming peoples, and are found along the seashore and on the banks of lakes and rivers wherever mulluscan forms of life abound. Analogous deposits occur on all dwelling and other sites where food was consumed. The contents of the deposits vary with the nature of the food supply. Oysters, clams, mussels, and numerous varieties of univalves yield a very large percentage of compact and durable refuse, and where their utilization was most extensive the middens are often of surprising magnitude.

These deposits of shells are sometimes spoken of as mounds, but they are rarely to be considered as works of art in the sense that their conformation is the result of design. The accumulating refuse generally increased the habitability of the sites, and distribution of the shells was no doubt in cases intelligently supervised with this end in view. It further appears that actual building sometimes took place, that shape was modified and height was increased for domiciliary and defensive purposes, and when the sites became places of sepulture the shells were utilized in building mounds. It is not, however, as works of art that these deposits are to be considered in this place — their use as constructions being a secondary consideration — but as accumulations of refuse inclosing in their mass reliable records of the food supply, the arts and industries, and, in a measure, the habits and customs of the people.

The dimensions of the accumulations are so remarkable that early observers were loth to admit their artificial origin. In some cases they cover areas twenty or even thirty acres in extent. On the shores of some of the Atlantic bays and rivers deposits are practically continuous for many miles and reach back from the water

for distances varying from a few rods to half a mile or more, according to the nature of the ground. It is estimated that in the Maryland-Virginia area alone the oyster-shell deposits cover upward of one hundred thousand acres. The deposits are heaviest where favorable dwelling sites occur near prolific shallows or bars; it is not exceptional to find them from ten to twenty feet deep, and a depth of thirty feet has been reported in some localities. The shells in decomposing yield a dark rich soil, and where decay is well advanced the shell fields are exceedingly fertile. On many sites in recent years the shells have been calcined in kilns and employed as fertilizer. At Popes Creek, Maryland, a single midden has yielded upward of 500,000 cubic feet of oyster shells for this purpose. They are also extensively employed in some sections in building roads and in paving streets.

In the main, the shell banks along the middle and northern Atlantic coast are so nearly homogeneous throughout their mass as to be regarded as representing a rather limited and not seriously interrupted period of occupancy, but the condition and extent of numerous examples farther south, and especially in Florida, suggest great age. The growth on them of live-oaks of the largest size proves that the deposits reached their present dimensions long before the discovery of America. It is also noted that in some cases the lower beds are in an advanced stage of decay, and, again, that they have become consolidated and that the bones imbedded in them have in great measure lost their animal matter — conditions indicating considerable age. The lapse of many centuries is also suggested by changes in the river courses and the extensive erosion of bluffs since the period of midden accumulation, as well as by changes in some of the molluscan forms of life, new varieties having arisen during the period of occupancy. It is noted also that cultural changes have taken place since man first occupied the sites, that in cases the artifacts of the lower layers are less plentiful and less highly specialized than in the upper, and that pottery is absent in the older strata and plentiful near the surface. Observations, however, bearing on the question of antiquity are as yet rather meager and fragmentary, and cannot be implicitly relied on. The cultural changes, for example, may be due largely to changes in

the tribes represented rather than to progress in the culture of a single people.

In some sections, especially on the seashore, the tribes resorted to the fisheries at stated seasons only, and in such cases the relics left do not fully represent the art of the people. The utensils and implements were to a large extent prepared for temporary and local use, and are exceptionally rude. However, as we pass along the coast from Maine to Mexico the artificial contents of the shell banks of each section represent somewhat fully the characteristic handicraft of the adjacent interior region; for example, rude cord-marked pottery is found in the northern middens, stamped ware in the southern, and painted ware in those of the Gulf states.

The Atlantic coastal belt from Carolina to Maine was in colonial times occupied by tribes of Algonquian stock, and the art remains are fairly homogeneous throughout, exhibiting characters not inconsistent with the theory that these simple people had sole possession of the soil for an indefinitely long period. The Iroquoian tribes more decidedly than any other inland people enroached upon the Algonquian areas, and in New York and New Jersey vestiges of their art extend down to the sea. The same is true of the Carolinas, where the southern Iroquoian tribes — the Tuscarora and the Cherokee — were dominant at the coming of the English. Notwithstanding these encroachments upon the coastal tribes, the shell-heaps and their contents may safely be regarded as almost wholly Algonquian.

The various Algonquian tribes of colonial days are known to us only through meager references by the colonists and occasional mention by writers of later date. The merest remnants of these peoples have come within the observation of scientific men of the last half of the nineteenth century and of the present decade. The Roanoke colony (1584–1587) came in contact with the Secotan, the Weapemeoc, the Chowanock, and other groups occupying the region between Chesapeake bay and Pamlico sound; the Jamestown colony, with the Powhatan, the Nanticoke, and the Conoy or Piscatawa; the Pennsylvania colony, with the Delawares; and the New Jersey-New York colonies, with the Delawares and Mohican. Many of the best known shell-heap sites of today were the village

sites of these tribes, so that the archeology of the region connects definitely with colonial history, giving an exceptional interest to our investigations.

Popes Creek Shell-heaps

It is not possible to describe all of the shell-heaps of these tidewater shores, but the general characteristics of all are so simple and uniform that the study of a single example will answer the main purposes of the present writing. The Popes Creek beds may well be chosen for this special examination, as they are among the most extensive deposits in the Potomac-Chesapeake region, thus serving as a type. They have also the great advantage to the student of having been extensively dissected by lime-burners.

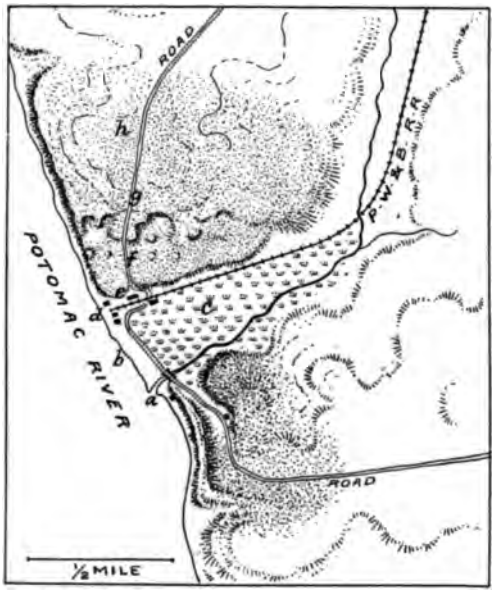


Fig. 8. — Map of Pope's Creek; the dotted areas represent the shell beds. *a*, Mouth of creek. *b*, Bar separating the marsh (*c*) from the river. *d*, Railway station. *e*, Kiln for calcining shells. *f*, Lower terrace, with shell bed partly removed. *g*, Slope to upper level. *h*, Main plateau.

Popes creek enters the Potomac from the Maryland side about 60 miles below Washington and 40 miles above the mouth of the river. At the mouth of this creek, on the north side, stands the small station which marks the southern terminus of the Pennsylvania Railroad. The only other buildings (1890) in the vicinity are a cottage, set against the slopes on the south side, and occasional farm houses distributed over the surface of the upland. The small stream descends from the plateau on the northeast, and, like many other small tributaries of the Potomac, widens near its mouth into an inlet. This is about a thousand feet wide on the river front

and extends back to the north a mile or more. Today this inlet is hardly more than a marsh — a brackish water meadow — through which the creek makes a tedious passage before entering the river at the southern end of the narrow sand-bar that encloses the marsh (figs. 8 and 9). Many years ago this inlet was a sheet of water deep enough for the accommodation of vessels of large size.

North of the creek is a bold spur of the plateau which decends by steep rounded slopes to the creek on one side and falls off to the river in a sheer cliff, from 50 to 100 feet in height, on the other.

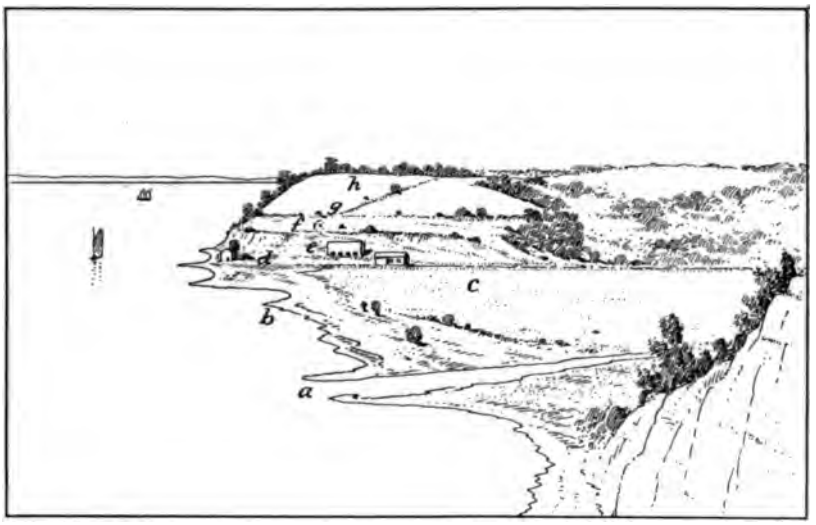


FIG. 9. — View of Popes Creek, looking north. *a*, Mouth of creek. *b*, Bar separating the marsh (*c*) from the river. *d*, Railway station. *e*, Kiln for calcining shells. *f*, Lower terrace, with shell bed partly removed. *g*, Slope to upper level. *h*, Main plateau.

South of the inlet the bluffs also rise in rounded contours from the creek, and on the river front extend to the south in a series of nearly vertical walls.

Popes Creek is not mentioned as a native village site in the writings of Smith or of any of the colonists who followed him. The nearest Indian village recorded by Smith was Potapaco, corrupted later into Port Tobacco, about eight miles to the north. It is probable that the tribe which occupied this site, at least in late pre-colonial and colonial times, was the Yoacomico, the chief seat of

which was probably on St Mary's river. In more recent times the Indians of the general region came to be known as Piscataways, the last remnant of which moved northward into the valley of the Susquehanna about the year 1700. It is claimed that Indian blood still flows in the veins of some of the present inhabitants of this section of the Potomac. The shell-heaps are first mentioned in scientific literature by Dr Elmer R. Reynolds.[1]

The first kiln established on this site for calcining the oyster shells for fertilizing purposes was owned by Mr William D. Merrick. It was situated at the base of the low terrace which forms the outer extremity of the northern spur. The railway station was erected about 1870, and a portion of the point of the shell-covered terrace was removed and the site leveled off for the buildings. The shells and earth were used for filling at the point where the road crosses the northern edge of the marsh. About the year 1881 new furnaces were built under the edge of the bank by Messrs Howard & Della, and the burning of the shells was carried on quite extensively for a number of years. The deposits have been almost completely removed from a space of about three acres on the terrace, as shown in the sketch map (fig. 10. See also plate VIII, *a*). On the south side of the creek also the shells have been utilized to a considerable extent.

It is apparent that the ancient oystermen collected the bivalves from the submerged bars about the mouth of the creek and carried them up the slopes to their dwellings or feasting places, which were situated on the comparatively level spots and, more especially, on the lower terrace, where the heaviest deposits of shells were found (figs. 8 and 9, *f*). It is stated on the authority of residents of the neighborhood that, at the outer margin of the terrace, the shells had accumulated to a depth of nearly twenty feet. The greatest depth observed in the portions that now remain is about five feet, the average depth over the whole area being estimated at six feet. This terrace is thirty-five to forty feet in height and has a superficial area of about four acres. The surface rises gently to the north, connecting with the ridge leading up to the plateau level (figs. 8

[1] *Abstract of Transactions of the Anthropological Society of Washington, 1879–81*, p. 23, Washington, 1881.



a. General View Showing Progress of Removal of Shells, and Lodge-site Remnants.



b. Heavy Deposit Showing Pockets of Decayed Shells Beneath.

POPE'S CREEK SHELL-HEAP

and 9, *g*). Ascending this ridge, it is found that the shells thin out gradually to four and then to two feet or less. Over limited areas on the summit the deposits increase in thickness, but half a

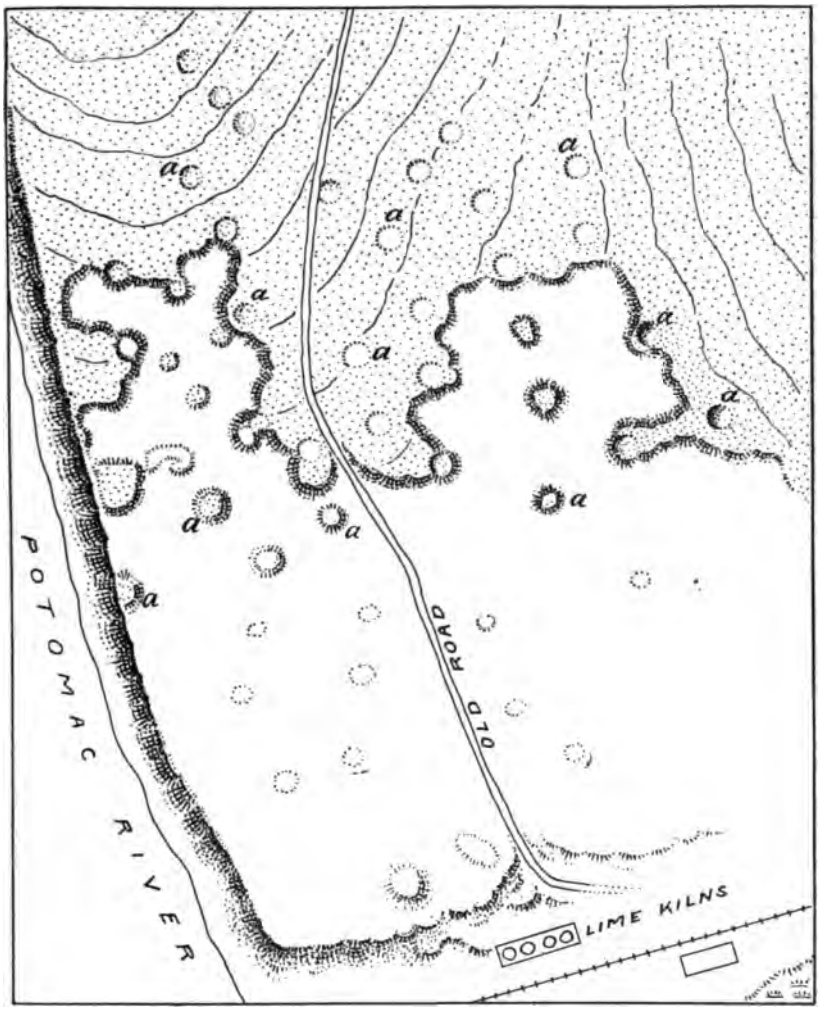


FIG. 10.— Sketch map of the outer terrace, showing the areas from which the shells have been removed. *a*, *a*, Old lodge sites.

mile back they are scattered thinly over the fields, numerous heavier clusters marking lodge sites. On the river front the tides and

currents have encroached upon the original slope of the promontory (figs. 8 and 9, *i*), leaving an almost vertical cliff reaching the full height of the lower terrace and extending in places to the summit of the plateau. Along the crest of this cliff a section of the shell deposits is exposed, affording an excellent opportunity for study.

On the south side of the creek the main deposit of shells occupies the margin of the nearly level plateau, some one hundred to one hundred and twenty feet in elevation. This mass of shells was not examined in detail, as it was under cultivation, but the deposit is several feet in thickness on the side next the creek. The area covered is hardly less than twenty acres. The edge of the plateau bordering the river front is not covered to any considerable thickness, and the narrow spur extending down to the mouth of the creek is almost without shells, a fact indicating clearly that, even at the time of aboriginal occupancy, this ridge was already too narrow to accommodate dwellings. The oyster gatherers have occupied two or three of the less steep portions of the slope toward the creek, and the accumulations have reached as much as five feet in thickness. The shells have been to some extent removed from these spots for burning.

The shell-deposit sites were necessarily to some extent dwelling or village sites, but it is believed that in many cases they were not the principal or permanent habitations of the people who occupied them. The communities concerned in the oyster fisheries of Popes Creek may have spent the summer farther inland, and the winter and spring months, during which the oyster is available, may have been spent here. Howsoever this may have been, the evidence of actual residence on this site may be seen on every hand, and the deposits of refuse are so extensive and the remains of articles of art so numerous, that this must be considered one of the most important aboriginal stations in the tidewater region.

One of the most striking features of this site is the presence of a large number of shallow depressions distributed over the shell surface, manifestly marking the sites of lodges. These depressions are not more than a foot or two in depth and are fifteen to thirty feet in diameter. They are approximately circular and arranged in





a. Deposit, Six Feet in Depth, of Well-preserved Shells.



b. Prevailing State of Preservation of the Shells; About One-half Actual Size.

POPE'S CREEK SHELL-HEAP

somewhat symmetric order, and are from twenty-five to sixty feet apart from center to center. According to Mr Theodore Stone, a resident of the neighborhood, the most important line of these sites, now nearly obliterated, extended from the point near where the railway station stands, across the middle portion of the lower terrace, and thence up to the highest part of the promontory. Other less regularly arranged lines were observed on the right and left of this. Mr L. M. Della was of the opinion that the house depressions were arranged in intersecting rows and with considerable regularity. When Howard & Della came to remove the shells for burning, it was found that the deposits were very impure within the area of these ancient depressions and of little value for the manufacture of fertilizer. The spaces between the depressions, however, were composed of comparatively pure shells, so that, as the work went on, the impure spots beneath the dwelling sites were left, and now in several instances stand as islands four to six feet in height (pl. VIII, *a*). On the map (fig. 10) some thirty sites are marked, and it appears that there was really little regularity in the disposition of the lodges. Rows can be made out, but the ground was so uneven over the portion of the bed still preserved that alignment would have been difficult. These depressions in the spring of 1891 were rendered more than usually distinct to the observer by the growth of weeds and grass, which filled them, contrasting strongly with the white shell surface surrounding them, which was too firm to encourage vegetation. The study of these ancient house sites is facilitated by the sections made by the lime-burners, as seen in the many vertical faces of the deposit thus exposed (pl. VIII, *a*). The portions beneath the lodges are often dark and impure, and the layers indicate successive occupancy probably extending over a considerable period. The conditions are shown in the section (fig. 11).

The surface stratum (about ten inches in thickness) is that part of the deposit disturbed by the plow. Beneath are the midden deposits, which have remained without disturbance since the period of aboriginal occupancy. Within the lodge pockets the shells are much blackened with vegetable matter and kitchen refuse. With the shells, and especially with the darker refuse, are many stone implements, burned and broken stones, pottery, bones of animals,

antlers of deer, etc. The shells between the lodge depressions, as seen at the right and left in the section, are comparatively free from other classes of refuse and of artifacts (pl. IX, *a*). The valves of the shells are usually separated, but are rarely broken (pl. IX, *b*), a con-

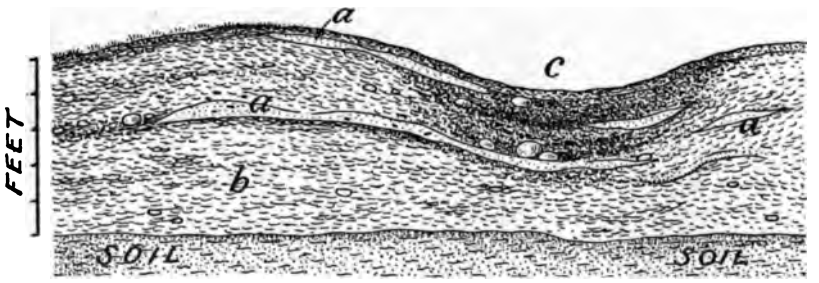


FIG. 11. — Section of deposits and lodge site. (*a*, *a*, Fire beds, layers of ashes and calcined shells. *b*, Pure shells. *c*, Lodge depression.)

dition making it practically certain that the oysters were roasted or steamed and not broken open with knives or hammers.

The manner of conducting the dredging work can readily be surmised. It is probable that here, as elsewhere, the oysters occurred on bars so shallow that at low tide they could be detached and gathered without difficulty or inconvenience. Diving was no doubt resorted to on occasion, and it is fair to assume that the inventive genius of the Indian was equal to the task of contriving some device by means of which dredging could be carried on from boats in the deeper waters. One of the drawings of John White, artist of the Roanoke colony, now preserved in the British Museum, shows a fishing party in a dugout canoe, and one of the men is depicted as using a long-handled utensil that suggests a rake, although

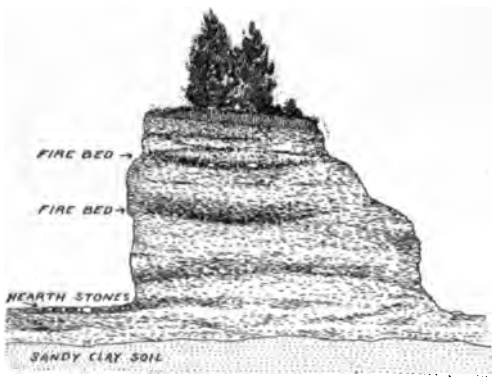


FIG. 12. — Hearth of bowlders near base of shell deposits.

it is possible that it was intended for a fish spear. On landing, the oysters were transported to the various feasting sites and lodges by means of skins, bags, or baskets, and we can readily picture the animated scenes that followed: the gathering of families and clans, the preparation of baking hearths (fig. 12) and steaming pits, the stone boiling in earthen pots, the feasting, and, on occasion, the music and dancing. On this site, beside the oyster industry, were carried on the various arts and customs of a primitive community: the gathering of stones and the shaping of stone tools, the making of weapons, the preparation of clay and the building and baking of rude caldrons; the spinning of thread and the weaving of coarse cloths, the making of nets and baskets, the dressing of skins, and the drying of meat, fish, and oysters; the carving of canoes, the building of lodges, the setting of fish weirs, and the planting of corn on favorable spots in the vicinity; the preparation for war and the chase, the mummeries of the medicine-men, the torture of victims, the wailing for the dead, and the strange ceremonies connected with burial.

Of the multitude of tools and utensils used by the inhabitants of this site, only those made of the most durable materials now remain. Objects of stone are especially plentiful, and although they present some local peculiarities, they are analogous in every essential with the stone implements of all other sites of the general region. The various classes of objects obtained may be enumerated as follows: Hearth stones, boiling stones, mortars, pestles, pitted stones, hammer-stones, bone-crushers, grooved axes, notched axes, celts, knives, arrow and spear heads, scrapers, drills, awls, net-sinkers, pottery, pipes, ornaments, and various forms of rejectage of manufacture.

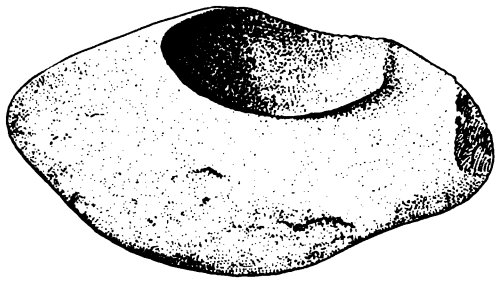


FIG. 13. — Mortar made of a large bowlder.

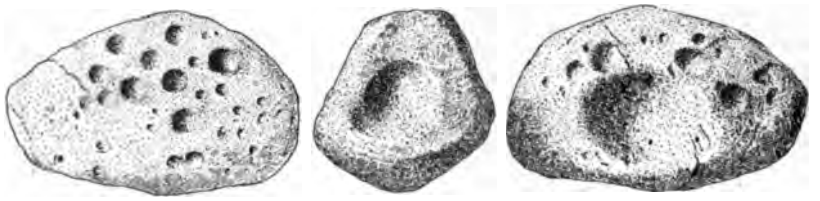
Numerous rude shallow mortars are found. They are, as a rule,

flattish bowlders or masses of rock, having originally a concave or flat side which has been utilized for grinding, or like forms that have been excavated sufficiently to adapt them to their purpose. A type specimen is given in figure 13. Another example, shown in fig. 14, is noteworthy in having been shaped about the periphery and base by flaking.



FIG. 14. — Shallow mortar with chipped under-surface.

The pestle or muller used in connection with the grinding basin or plate takes a variety of forms dependent largely on local conditions. Roundish bowlders, being plentiful, were utilized in many cases. Typical artificial forms, however, are not uncommon. Doctor Reynolds obtained a fine cylindrical specimen sixteen inches long and two inches in diameter, with rounded ends. A partially finished example shaped from an oblong bowlder of quartzite was collected by Mr J. C. Lang. These cylindrical pestles may have been used with the stone mortars, but more probably with wooden ones for pulverizing corn, seeds, dried meat, etc.



b *a* *b*

FIG. 15. — *a*, Pitted stone. *b*, Pitted grinding stone (opposite sides).

Pitted stones of small size are occasionally found. Generally they may be classed as hammer-stones, but there are some with deep and rough pits, made of light friable stone (fig. 15, *a*), which would not have been useful as hammers. In some cases there are two or more pits in one side, neither being central. The small mortar made of a bowlder (fig. 15, *b*) has upon the surface about the mortar depression six, and on its opposite side eleven, small pits. It is suggested that these may have been used for pulverizing small quantities of paint or other material, for hammer-

ing out metal, for cracking nuts, or as sockets for spindles, but it seems advisable for the present to classify them, so far as the pittings are concerned, with the problematical objects.

Numerous hammer-stones are found associated with the midden refuse. They are pebbles or small bowlders of suitable shape, usually ovoid, which have assumed a somewhat discoidal form by continued use in the manufacture of stone implements (fig. 16, *a*). In some cases slight depressions have been pecked in the sides of the implements to facilitate their use. Other hammer-like implements are somewhat oblong bowlders of medium or small size, which are battered at the ends as if in rough usage (fig. 16, *b*).

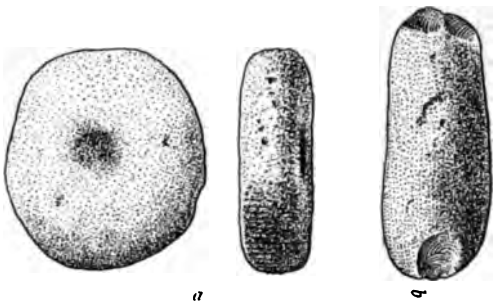


FIG. 16. — Hammer-stones.

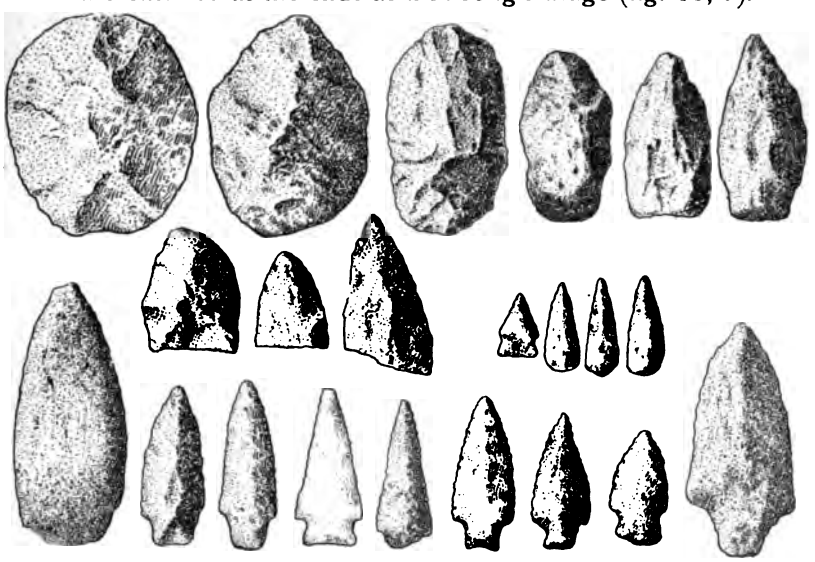


FIG. 17. — Arrow and spear heads, knives, and typical rejecta of manufacture.

Many arrow-heads, spear-heads, and knives of the usual forms, made almost exclusively of quartz and quartzite, are found upon

and in the shell banks and in the fields surrounding them. The materials used in their manufacture are plentiful about the site, and considerable shop refuse is found, especially surrounding the marginal lodge sites on the upper levels. Figure 17 includes the various minor flaked objects common on this site.

Probably the most numerous class of implements are bowlders, generally of oblong flattish contour, which have been given rude edges by the removal of a few flakes from one end (fig. 18, *a*). These are common on ancient inhabited sites over the entire Chesapeake-Potomac region. They may have served as axes and hatchets in cutting wood, in carving dug-out canoes, in breaking the bones of large animals, etc. They are in cases so much blunted by use as to be classed as hammers (fig. 18, *b*). Many, however, show little or no trace of wear — a condition that may result from the fact that suitable bowlders for the shaping of these tools are plentiful all along the face of the bluffs and on the river banks below, and that when an implement was needed, it was quickly improvised, and, after serving the immediate purpose, abandoned.



a *b* *c*

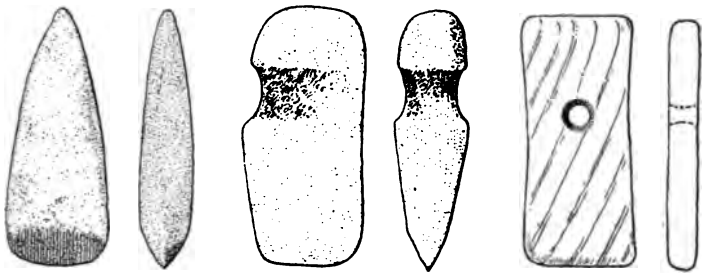
FIG. 18. — Sharpened bowlders, with and without notches.

The sharpened bowlders referred to above grade into another class of tools, made of bowlders of medium size, which, besides the rude flaked edge, have shallow notches broken in the sides, evidently to facilitate hafting (fig. 18, *c*). Doubtless these should be classed as axes.

Implements and ornaments of polished stone are not numerous on this site, and such as have been added to our collections do not differ in any important particular from those of the surrounding country. Examples are illustrated in figure 19.

The pottery made and used by the Popes Creek people was of somewhat rude construction and consisted principally of large sized pots or caldrons with wide mouths and bluntly pointed bases (fig. 20, *a*). These vessels are such as would have served in cook-

ing the oysters and fish which constituted the principal food supply of the natives. They are made of a coarse shell-tempered paste, have thick walls, and very generally show net impressions on the



a *b* *c*

FIG. 19. — Polished implements and pierced ornament.

surface (fig. 20, *b*). In cases, bands of very simple and incised designs are carried around the vessel beneath the rim. The type is characteristic of the shell middens from the Yadkin valley on the south to the Hudson on the north.[1]

A number of bone implements were obtained from the shell deposits, including awls made of the bones of birds or small mammals, and a single object, perhaps a pendant, having a perforation at the wider end, ornamented with a number of notches on the margins.

During the progress of the removal of the shells on the lower terrace a number of skeletons were encountered, but no observations were made regarding the manner of burial. No cemeteries have been located, and it is probable that burials here, as at many other points in the general region, were collective, the bodies, or the bones simply, being kept for burial in ossuaries at stated periods.

Although the Popes Creek site is situated within a few miles of the upper limit of the oyster-bearing shores — the point at which the water becomes too fresh for their support — it was, no doubt, in a way the Mecca of the peoples from more northerly localities who had learned to appreciate the oyster as a means of sustenance. The great bulk of the refuse may thus in a measure be

[1] For a detailed description of the Popes Creek pottery, with illustrations, see Holmes in *Twentieth Annual Report of the Bureau of American Ethnology*.

accounted for. But it is observed that deposits of almost equal importance occur along the salt-water shores of the Chesapeake and all of its main tributaries, and one can hardly make a landing be-



a *b*

FIG. 20. — *a*, Fragment of pottery with net impressions. *b*, Clay impression from pottery fragment showing net. (¾)

tween Richmond and Havre de Grace without encountering middens composed largely of oyster shells, or the sites from which they have been removed in recent years.

BUREAU OF AMERICAN ETHNOLOGY,
WASHINGTON, D. C.



FORMER TERRITORY OF THE POWHATAN CONFEDERACY

(THE YELLOW CIRCLES INDICATE LOCATION OF EXISTING BANDS)

THE POWHATAN CONFEDERACY, PAST AND PRESENT

By JAMES MOONEY

In our study of Virginia Indian history, two facts must be borne in mind — first, the Indians under the jurisdiction of Powhatan and his successors constituted but one of several tribal groups within the limits of the future state, and occupied only a proportionate share of its territory; and second, the Jamestown colonists of 1607 were not the first whites with whom the natives came in contact, or even the earliest to attempt a settlement.

Whether or not Sebastian Cabot, in 1498, had coasted so far south as Virginia, it is certain that Verazzano, in 1524, and Gomez a year later, landed in the neighborhood of Chesapeake bay, the latter taking formal possession for the King of Spain. Throughout the remainder of the 16th century the Virginia coast was frequently raided by Spanish slave hunters from the West Indies, and in 1570 the Jesuit Father Segura, with seven other priests and a number of lay companions, established a mission, which, after a brief existence, was destroyed by the natives, the whole company being massacred excepting one Indian boy. The massacre was revenged by Menendez some time afterward. Raleigh's abortive attempts at settlement on Roanoke island in 1584–87 were outside the boundaries of Virginia, but the unfortunate result must have been known and discussed among all the tribes of the Chesapeake region. Strachey (*ca.* 1616) even claims that Powhatan himself was responsible for the destruction of the colony. The Jamestown colonists landed among a people who already knew and hated the whites.

The present state of Virginia has an area of 42,627 square miles, of which the tribes of the Powhatan confederacy held somewhat more than 8,000, or about one-fifth of the whole, being the eastern tidewater section together with the two counties on the Eastern shore. Their western boundary was about the geologic break line marked by the falls of the principal rivers at Great Falls

on the Potomac, Fredericksburg on the Rappahannock, Richmond on the James, and Petersburg on the Appomattox, and thence following the Blackwater divide by Suffolk to the coast. Strachey, indeed, if not also Smith,[1] makes Powhatan's dominion extend to the head of Chesapeake bay, but there is abundant evidence in the early records that the Maryland tribes were enemies to those of Virginia, and held themselves independent. Those on the eastern shore of Virginia also seem to have been practically independent, as might have been inferred from the wide interval of water by which they were separated from the others; but as they spoke the Powhatan language and were within the Virginia jurisdiction, we may consider them with the Powhatan confederacy.

The twenty-eight Powhatan tribes enumerated in detail by Smith as existing in 1607,[2] numbered, according to his estimate, about 2,385 fighting men; but as he omits from this count the people of Warraskoyac and of several other "king's houses" or tribal capitals indicated on his map, we are probably justified in making it a round 2,500. Strachey, writing about 1616, makes it 3,320, but some of his figures are plainly too high.[3] Taking the lower estimate we should have, on a reasonable calculation, a total population for the confederacy of about 8,500, or about one inhabitant to the square mile. The same territory has now a population of considerably more than half a million. By way of comparison it may be stated that the Tuscarora, the leading tribe of eastern North Carolina, were estimated a century later at 1,200 fighting men in

[1] Strachey, *History of Trauaile into Virginia*, Hakluyt Society ed., 48, 1849. Smith (Arber ed., 351, 1884) states that the people of Accomack and Acohanock were subject to Powhatan. It is not clear from the wording of the paragraph whether or not he means to include any of the Maryland tribes in the same statement, but on the preceding page he says that the Sasquesahanocks (Conestoga) at the head of the bay were scarcely known to Powhatan. His map extends the name "Powhatan" into lower Maryland. The Powhatan were Algonquian, the Conestoga were Iroquoian.

[2] Smith, *Gen. Hist. Va.* (1624), Arber ed., 347–8, 1884. In Smith's *History*, in the 1612 edition (Arber ed., 91–55), he includes the "Warraskoyacks" at 40 fighting men, but puts the Payankatanke at 40, the Patawomeke at 160, and the Chickahamania at "neere 200" fighting men. By the treaty with the Chickahamania in 1614 (Smith, *Virginia*, Arber ed., 515), they agreed to be ready at any time to furnish 300 fighting men to the aid of the English. This agrees with Strachey's estimate about the same period.

[3] Strachey, *Virginia*, Hakluyt Society ed., 56–62, 1849.

fifteen towns (Lawson), while the powerful Iroquois confederates of New York were estimated in 1689 at 12,850 souls.

Back of the Powhatan were other tribes of alien lineage and hostile to the tidewater people. On the upper Rappahannock were the confederated Mannahoac, and on the upper James the confederated Monacan, both apparently of Siouan stock and of ruder culture than the Powhatan. Southwest were the Nottoway and Meherrin of Iroquoian stock, on the rivers of those names, and on intimate terms with the kindred Tuscarora of North Carolina. Farther toward the southwest, on the upper waters of the Roanoke, were the Occaneechi, probably also of Siouan stock. Beyond them in the mountains about upper New river were the Mohetan, or Moketan, for whom we seem to have but a single authority, of date 1671.[1] The Richahecrian, or Rickohockan, who came down from the mountains in 1656 and made bloody invasion of the lowlands,[2] appear to be identical with the Cherokee, and can not fairly be considered a Virginia people.

As it was nearly a century after the founding of Jamestown before the white settlements extended beyond tidewater, we hear but little of these inland tribes until they were already far advanced toward ultimate extinction through wars, disease, and invasion by the dispossessed tribes. It is therefore impossible to form any definite calculation of their original population. We know that the Nottoway were a strong and influential tribe in the first settlement period, that in 1669, by official census, they largely outnumbered the principal Powhatan tribes, and that they retained their name and language as late as 1820. The Meherrin, by the same census of 1669, were then equal in number to the Pamunkey — originally the strongest tribe of the Powhatan confederacy. We know that the principal Monacan town, above Richmond, was still an important Indian center in 1670, and that the language of the Occaneechi was at one time the trade language over a large area. The Mannahoac, being wandering hunters for the greater part, were probably not numerous. As the fertile Shenandoah valley remained unknown

[1] Batts Exploration, 1671, in *N. Y. Col. Docs.*, III, 194–97, 1853; see also Bushnell, in this number, especially pp. 51–52.

[2] Neill, *Virginia Carolorum*, 245, 327, 1886.

until about 1720, there is no record of its earlier history; but we can hardly believe that it was without Indian occupancy.

Making due allowance for the difference between mountain and lowland, and between hunting and agricultural or fishing habit, it seems reasonable to assume for these inland tribal groups — Mannahoac, Monacan, Nottoway, Meherrin, Occaneechi, and Mohetan — holding altogether four-fifths of the area of Virginia, a total original population at least equal to that of the single tribal group concentrated in the remaining one-fifth or tidewater section. This would give some 17,000 Indians as a conservative estimate for the whole state. The present population for the same area is, in round numbers, 2,000,000.[1]

This aboriginal population is now entirely extinct, with the exception of the 700 mixed-bloods of Powhatan stock. The Nottoway died where they had always lived, their last notice in history being in 1820, when they numbered but 27, all told, of whom only three spoke their own language.[2] It is possible that some negroes of Southampton county may properly claim a strain of Nottoway blood. The Meherrin faded out at an earlier period. The other inland tribes, after having been driven south by the conquering Iroquois and back again by the Carolina settlers, until completely broken, were finally gathered by Governor Spotswood, about 1712, at Fort Christanna, near the present Lawrenceville, in Brunswick county. They numbered then altogether less than 1,000 souls. The Tuscarora war, the continued attacks of the Iroquois, and the aggressions of the whites, with their own acquired vices, hastened their decline until, about the year 1740, under the names of Saponi and Tutelo, the few survivors removed to the north and placed themselves under the protection of their old enemies, the Iroquois. The last full-blood died on the Grand River reserve, Ontario, in 1871.[3]

To return now to the Powhatan. Following Jefferson, it is commonly said that their confederacy consisted of 30 tribes.

[1] The census of 1900 gives 1,854,184.

[2] Morse, *Report on Indian Affairs*, 31, 1822.

[3] For detailed account of these inland tribes see Mooney, *Siouan Tribes of the East*, Bulletin 22, Bureau of American Ethnology, 1894.

This is approximate, but not exact. Smith (1607), our first and principal authority, names 28 tribes, giving the fighting strength of each, in his text, but indicates on his map 36 "king's houses," or tribal capitals. The whole number of villages, large and small, within the territory of the confederacy, as shown on the map, is 161. A manuscript authority of 1622[1] says that the confederacy comprised "32 Kingdomes." Strachey, about 1616, gives a list of 32 chief jurisdictions, of which only about half are identifiable with those of Smith's list. He assigns, however, two chiefs to the Appamattock, four to the Nandsamund, and three to the Pamunkey, thus reducing the number of distinct tribes to 26. The census of 1669, by which time the natives had been wasted by more than half a century of almost constant warfare, has the names of only 11 of the Powhatan tribes noted by Smith, together with five others apparently resulting from shifting and new combinations of the broken remnants. In 1705, according to Beverley, there remained only six settlements in existence on the mainland and nine on the Eastern shore, besides a few scattered individuals, the whole numbering together some 350 men, or perhaps 1,170 in all. Thus within a single century the formidable Powhatan confederacy had wasted to about one-seventh of its original strength.

This result had been brought about by three Indian wars — in 1622, 1644, and 1675 — together with constant killings and destructions on a smaller scale; by a system of clearances and man hunts inaugurated in 1644 and continued for some years; by smallpox and other epidemics; and by the general demoralization resulting from subjection to the conquering race.

Following is the statement of the Powhatan population, in fighting men, for the first century of colonization, as given by Smith in 1607,[2] Strachey about 1616,[3] the Virginia census of 1669,[4] and Beverley in 1705.[5] The discrepancy in the names of the various lists is probably due to the progressive combination of broken tribes

[1] See Mr Bushnell's article in this number, p. 32.

[2] Smith, *Virginia*, Arber ed., 347–351, 1885.

[3] Strachey, *Virginia*, Hakluyt Society ed., 56–62, 1849.

[4] Neill, *Virginia Carolorum*, 325–326, 1886.

[5] Beverley, *Virginia*, book III, 62–63, 1705.

under new names, the abandonment of old sites, and the occupancy of new villages.

		Smith 1607	Strachey 1616	Census 1669	Beverley 1705
1	Kecoughtans	20	30		
2	Paspaheghes	40	40		
3	Chickahamanians, nearly	250	300	60	16 +
4	Weanocks	100	100	15	
5	Arrowhatocks	30	60		
6	Powhatan	40	50	10	
7	Appamatucks	60	120	50	"not above seven families"
8	Quiyougcohanocks	25	60		
9	Nandsamunds	200	200	45	20
10	Chesapeacks	100	Cassapecock? 100		
11	Youghtanund	60	70		
12	Mattapament	30	140		20
13	Pamaunkee, nearly	300	300	50	40
14	Werawocomoco	40	40		
15	Chiskiack	40 or 50	50	15	
16	Payankatanke	50 or 60			
17	Cuttatawomen I	30			
18	Moraughtacunds	80			
19	Rapahanock	100		30	"a few families"
20	Cuttatawomen II	20			
21	Nantaughtacund	150		50	
22	Wighcocomoco	130		70	3
23	Sekacawone	30			
24	Onawmanient	100			
25	Patawomekes	over 200			
26	Tauxenent	40			
27	Acohanock	40	40		
28	Accomack	80			
	Additional "king's houses" on Smith's map:				
1	Warraskorack		60		
2	Orapaks		50		
3	Opiscopank (on Rappahannock)				
4	Pissaseck (on Rappahannock)				
5	—— (on Potomac)				

6 Uttamussak 7 Menapucunt 8 Kupkipcock	}	From Smith and Strachey references it appears that these were the three principal settlements of the Pamunkey, No. 13

Besides the 18 names in Strachey's list which are identifiable with names on Smith's list or map, Strachey has also the following: Cantaunkack, 100 men; Mummapacune, 100 men; Pataunck, 100 men; Kaposecocke, 400 men; Pamareke, 400 men; Shamapa, 100 men; Chepecho, 300 men; Paraconos, 10 men — a total of 26 tribal jurisdictions, estimated by Strachey to comprise 3,320 fighting men.

In addition to the 11 names in the census of 1669 which are identifiable with Smith's list, the same census has also the following: Powchyicks, 30 bowmen; Totas-Chees, 40 bowmen; Portobaccoes, 60 bowmen; Mattehatique (included with Nanzcattico, *alias* Nantaughtacund); Appomatux (Westmoreland county and distinct from the tribe on the river of that name), 10 bowmen — a total of 16 tribal communities with 605 fighting men, exclusive of the Eastern shore, which is not noted.

Beverley gives definite figures only for the two or three principal remnant tribes, but says that all the Indians of Virginia together could not then raise 500 fighting men, including the Nottoway and Meherrin, whom he puts at about 130. This might leave about 350 for the Powhatan tribes, including those on the Eastern shore, or from 1,150 to 1,200 souls. The remnants of the Siouan tribes already noted had not yet been gathered at Fort Christanna, but were at that time shifting about in central Carolina.

When the English landed at Jamestown in 1607, the Powhatan confederacy was a thing of recent origin. According to Smith's statement, which is borne out by Strachey, Powhatan, who was probably not yet sixty years of age at that time, had inherited only the territories of Powhatan, Arrowhatock, Appamatuck, Pamaunkee, Youghtanund, and Mattapament, all the other tribes and territories being reported as his own conquests.[1] The six original tribes occupied the territory extending some 25 miles around Richmond, and comprised some 520, or about one-fifth of the approximate 2,500

[1] Smith, *Virginia*, Arber ed., 375; Strachey, *Virginia*, 49. On page 347 Smith includes also Werawocomoco and Chiskiack.

fighting men under his jurisdiction at the settlement period. Of these, the Pamunkey outnumbered all the other five together, and appear to have been the original nucleus of the confederacy, which probably had its beginning about the same period which Hewitt assigns for the formation of the Iroquois league, viz, 1570. The essential difference between the two was that, whereas the Iroquois league was founded upon mutual accommodation and common interest, the Powhatan confederacy was founded on conquest and despotic personal authority, and consequently fell to pieces with the death of the master, while the Iroquois league still exists with much of the old-time form.

As an example of Powhatan's methods, we are told how, in 1608, for some infraction of his authority, he made a night attack on the Piankatank tribe, slaughtered all the men who could not escape, and carried off the women as captives.[1] Some years before he had taken advantage of the death of the chief of the Kecoughtan to invade their territory, kill all who made resistance, and transport the rest bodily to his own country, finally settling them at Piankatank, which he had previously depopulated.[2] In the same way, on the strength of an ominous prophecy, he had exterminated the entire Chesapeak tribe and transplanted a colony of his own people in the desolated territory.[3] To make his position more secure, he placed his sons or brothers as chiefs in several principal towns, while he himself ruled in his own capital.[4] From all accounts, he was greatly feared and implicitly obeyed, governing rather by his own personality than according to tribal custom. The powerful Chickahominy, however, although accepting him as over-lord, maintained their own home rule, and took an early opportunity to put themselves under the protection of the English.[5]

The displacement of the native tribes began almost with the finishing of the first stockade. The English, being ill supplied with provisions and not yet in position to procure more by their own

[1] Smith, *Virginia*, Arber ed., 378, 1885 ; Strachey, *Virginia*, 36.

[2] Strachey, *Virginia*, 36, 61.

[3] Ibid., 101, 105.

[4] See Strachey, 56–62.

[5] Strachey, 61 ; Smith, 51, 347, 515 ; Hamor, *True Discourse of Virginia* (1615), Albany ed., 11 [1860].

labor, proceeded to live off the country, making constant demands which the helpless savages were not strong enough to resist. For instance, a foraging party was sent to Nandsamund to procure 400 bushels of corn that the Indians had promised in order to save their canoes, which the white men had seized and were coolly chopping to pieces. It was now winter, and the Indians pleaded that their corn was near spent — they had already loaded the first visitors with as much as the boats could carry — and that Powhatan had told them to keep the rest for themselves. So, "upon the discharging of our muskets they all fled and shot not an arrow. The first house we came to we set on fire, which when they perceived they desired we would make no more spoil and they would give us half they had. How they collected it I know not, but before night they loaded our three boats." Continuing, they visited one town after another, but found all the people fled until they reached Apamatuck, "where we found not much; that they had we equally divided," leaving the owners copper and other trinkets in payment.

On another occasion "we, having so much threatened their ruin and the razing of their houses, boats, and weirs," the frightened Indians promised, "though they wanted themselves, to fraught our ship and bring it aboard to avoid suspicion. So that, five or six days after, from all parts of the country within ten or twelve miles, in the extreme frost and snow, they brought us provision on their naked backs."

The result of it all was that before the colony was two years old the principal Indian settlements had been seized by the white men, Powhatan had withdrawn from his place within easy reach of Jamestown to a remote town on the head of Chickahominy river, and killings and burnings had become so frequent that no Englishman was safe alone outside the stockade of the fort.

Open war on a large scale was deferred, however, until 1622, when Powhatan had been four years dead and his brother Opechancanough had succeeded to the Indian government. Pocahontas, for whose sake her father had restrained his own hostile feeling, had died before him. On March 22, 1622 (o. s.), Opechancanough began the war with a simultaneous and unexpected

attack upon almost every settlement and plantation within the limits of the colony, by which 347 men, women, and children were massacred in the space of a few hours, most of them without the slightest chance for defending themselves, their lifeless bodies being mangled and abused in regular savage fashion.[1] The Indians of the Eastern shore took no part in the massacre or the consequent war. The people of Potomac also remained friendly until driven to hostility by the massacre of a number of their people.

By this time, however, the colony had increased to nearly 4,000, so that in spite of the number thus slaughtered — "there being yet, God be praised, eleven parts of twelve remaining" — there was no question of the outcome as soon as the settlers could organize for defence and retaliation. It is probable that the Powhatan confederates themselves were by this time reduced to a smaller number, even supposing that they could be held together to act as a unit.

Immediately on receipt of the news at home, orders were forwarded to the governor of the colony "to root out [the Indians] from being any longer a people. . . . Wherefore, as they have merited, let them have a perpetual war without peace or truce, and, although they have desired it, without mercy, too." Exception was made, however, "for the preservation of the younger people of both sexes, whose bodies may by labor and service become profitable." Women were not included in this exception, but were doomed with the men.[2] To accomplish the extermination, instructions were given to starve the Indians by burning and spoiling their corn fields, to hire the neighboring tribes to bring in their heads, and to organize and keep constantly in the field bands of armed men to "pursue and follow them, surprising them in their habitations, interrupting them in their hunting, burning their towns, demolishing their temples, destroying their canoes, plucking up their weirs, carrying away their corn, and depriving them of whatsoever may yield them succor or relief." Special rewards were promised

[1] Smith, Arber ed., 572–583; Waterhouse, etc., in Neill, *Virginia Company of London*, 317–346, 1869.

[2] Instructions from London Company, Aug. 1, 1622, in Neill, *Virginia Company of London*, 331, 1869.

for the seizure of any of the chiefs, with "a great and singular reward" to any one who could take Opechancanough.[1]

In January, 1623, the Virginia council reported to the home office that they had anticipated instructions by setting upon the Indians in all places, and that by computation and by the confession of the Indians themselves, "we have slain more of them this year than hath been slain before since the beginning of the colony."[2]

By this war the Indians were so reduced in numbers and means that for more than twenty years there was doubtful truce, when Opechancanough determined upon a final effort, although now so old and feeble that he was no longer able to walk or even to open his eyes without help. As before, the rising began with sudden surprise and massacre, April 18, 1644 (o. s.), along the whole border, but with the heaviest attack along Pamunkey river, where the blind and decrepit but still unconquered chief commanded in person, carried about by his men from place to place. The number of whites killed in this second massacre is variously stated from 300 to 500, the discrepancy being due to the fact that the colony was now so well advanced and the settlements spread out over so much territory that exact accounting was neither so easy nor of so much importance as in 1622.

We have few details of this war, in which this time the advantage was so immensely on the side of the English that the result is summed up in the report of the Assembly in March, 1646, that the Indians were then "so routed and dispersed that they are no longer a nation, and we now suffer only from robbery by a few starved outlaws."[3]

The same Assembly authorized other expeditions and the building of forts along the border. In the end, Opechancanough was taken and brought to Jamestown, where he was shot in prison by one of his guards. His successor, in October, 1646, made a treaty of submission by which the Indians agreed to abandon everything below the falls on James (Richmond) and Pamunkey (near Han-

[1] Instructions from London Company, ibid., 331–32.

[2] Report of Governor and Council, Jan. 20, 1623, Neill, *Virginia Company*, 365, 1869. We modernize the spelling.

[3] Neill, *Virginia Carolorum*, 191, 1886.

over?) rivers, and to restrict themselves on the north to the territory between the York and the Rappahannock.[1]

In 1654, on occasion of another Indian alarm, a large force was ordered against the Indians on Rappahannock river, but no details of the result are given.[2] In the next year the Indian lands were made inalienable except by permission of the Assembly.[3]

In 1656 a large body of strange Indians, called Richahecrians (possibly Cherokee), came down from the mountains and made camp at the falls of James river, apparently to start a friendly acquaintance for trade purposes. A force of 100 men, however, under Col. Edward Hill, was sent to drive them back. Totopotomoi, chief of the Pamunkey, joined the expedition with 100 of his own men. The result was disastrous. The English were defeated, the Pamunkey chief and most of his men were killed, and Hill was obliged to make terms with the Richahecrians, for which he was afterward brought to trial by the Assembly.[4]

In 1675 came another Indian war, involving Maryland as well as Virginia, and known in history as Bacon's Rebellion from the fact that the leader of the Virginia volunteers acted in direct opposition to the colonial governor, Berkeley. The immediate cause was a series of small raids upon the Virginia frontier by Indians from Maryland, either refugees fleeing before the Iroquois, or, according to Beverley, instigated to mischief by the jealousy of New York traders.[5] A force of 1,000 men, including cavalry, was authorized against the Indians, and it was made death, with forfeiture of estate, to sell, directly or indirectly, powder or firearms to Indians. The tribes most concerned were the Susquehanna (Conestoga) and Doeg (Nanticoke?) of Maryland, with the Occaneechi and others of western Virginia. The broken Powhatan tribes,

[1] For the war of 1644–46, see Beverley, *History of Virginia*, bk. I, 50–53, 1705; Neill, *Virginia Carolorum*, 178–194, 1886; Drake, *Indians of N. Am.*, bk. IV, 21–22, 1848.

[2] Neill, *Virginia Carolorum*, 238, 1886.

[3] Ibid., 242.

[4] Neill, *Virginia Carolorum*, 245, 1886; Burk, *Virginia*, II, 105, 1805; Drake, *Indians of N. Am.*, bk. IV, 22, 1848; T. M., *Bacon's Rebellion* (1705), reprint in Force's *Tracts*, I, 1835.

[5] Beverley, *Virginia*, bk. I, 69, 1705.

under the woman chief, Queen Anne of Pamunkey, took no part in the hostilities, but suffered, as usual, in the result. In 1677 the war was brought to a close by a general treaty of peace with all the tribes in relation with the Virginia government, by which they submitted to the English authority and were confirmed in the possession of their tribal lands, subject each to an annual quitrent of three arrows and a tribute of beaver skins. At the same time they bound themselves to give immediate notice of the appearance of any strange Indians on the frontier, and to be ready to furnish a quota of men when required to serve against an enemy. The queen of Pamunkey, widow of Totopotomoi, already mentioned, was recognized in certain special dignities. The signatory tribes were the Pamunkey, Appamattoc, Weanoc, Nansemond, Nantaughtacund, and Portabaccos — all of the old Powhatan confederacy; with the Nottoway, Meherrin, Monacan, and Saponi.[1]

This treaty may be considered to mark the end of the Indian period. Henceforth the dwindling tribes appear chiefly as appealing for protection or justice, the chronic grievance being trespass upon their reserved lands. From various references it is evident that Indian slavery was common even after peace had come, and this probably hastened the process of intermixture with the negro race. Their last appearance in treaty negotiations was at Albany, in 1722, when, through the efforts of the governors of New York, Pennsylvania, and Virginia, the Iroquois made definite promise to refrain from further inroads upon the Virginia tribes, among whom were named the Nansemond, Pamunkey, and Chickahominy, with the Nottoway, Meherrin, and Christanna Indians, under which last name were included the remnants of the Siouan tribes of the East.[2]

According to Beverley's statement, as already noted, the whole

[1] Neill, *Virginia Carolorum*, 346–385, 1886; Beverley, *Virginia*, bk. 1, 68, passim, 1705; Mooney, *Siouan Tribes of the East*, 54, 1894; Virginia Colonial Records, with treaty and bibliography of Bacon's Rebellion, in *Va. Mag. of Hist. and Biography*, XIV, no. 3, Richmond, Jan., 1907. We have standardized the tribal spellings.

[2] This seems to be the treaty meant by Jefferson (*Notes on Virginia*, Boston ed., 131, 1802). There is no record in the *New York Colonial Documents* of any similar treaty in 1685, as stated by him, but in 1682 a like arrangement was made at Albany in behalf of the Maryland Indians.

Indian population within the explored portions of Virginia, numbered, in 1705, fewer than 500 able men, of whom the Powhatan remnants may have had 350. The combined white and negro population at the same period amounted to perhaps 100,000 souls.[1] In 1723 the Nansemond petitioned Virginia for help, saying that North Carolina had surveyed their whole remaining lands, and that her citizens were building their houses upon the Indian corn fields.[2] In 1699 the Accohanock Indians of the Eastern shore had made similar complaint that "the English have seated upon all the lands which were reserved to the Indians by the Articles of Peace" (1677), and that "the Indians not having any lands of their own" were in great poverty and necessity.[3] In 1786 the Gingaskin Indians [Gangascoe, of Beverley], also of the Eastern shore and representing the old Accomac, in petition to the Virginia government stated that "it must be remembered on record that but a small pittance was allowed us of our wide-extended territories for our subsistence, and small as it is, we understand, by the application of some or one gentleman who claims it as his right, it is perhaps to be wrested from being possessed by your already much distressed and unhappy petitioners."[4] Always consistently the same story.

In his *Notes on Virginia*, written originally in 1781, Jefferson has a paragraph on the condition of the Powhatan remnant at that time, which contains as many misstatements as could well be crowded into the same number of lines:

> Very little can now be discovered of the subsequent history of these tribes severally. The Chickahominies removed, about the year 1661, to Mattapony River. Their chief, with one from each of the tribes of the Pamunkies and Mattaponies, attended the treaty of Albany in 1685. This seems to have been the last chapter in their history. They retained, however, their separate name so late as 1705, and were at length blended with the Pamunkies and Mattaponies, and exist at present only under their names. There remain of the Mattaponies three or four men only, and they have more negro than Indian blood in them. They have lost their language, have reduced themselves, by voluntary sales, to about fifty

[1] See Jefferson's census of tithes, *Notes on Virginia*, Boston ed., 117, 1802.

[2] *Virginia State Papers*, 1, 205, 1879.

[3] Ibid., 65.

[4] Ibid., 214. The name is given as Lingaskin, by error of reading.

acres of land, which lie on the river of their own name, and have from time to time been joining the Pamunkies, from whom they are distant but 10 miles. The Pamunkies are reduced to about 10 or 12 men, tolerably pure from mixture with other colors. The older ones among them preserve their language in a small degree, which are the last vestiges on earth, as far as we know, of the Powhatan language. They have about 300 acres of very fertile land on Pamunkey River, so encompassed by water that a gate shuts in the whole.[1]

The grossest error in this paragraph is in regard to the Chickahominy. From a petition of 1689 it appears that they, or some of them, had temporarily joined the Pamunkey to escape the inroads of the Seneca (i. e., here, the Iroquois). This removal did not take place about 1661. We know from the census of 1669 that it must have been subsequent to the latter date, and it probably occurred in consequence of the invasion of northern tribes which brought about Bacon's Rebellion in 1675. There is no record of any Virginia tribes attending at Albany in 1685, and the date should be 1722 — nearly forty years later. So far from the name being extinct, the tribe is still, as it probably was from the beginning, the largest of the confederacy. Both Mattapony and Pamunkey must have been much more numerous than represented, and with more speakers of the old language, while the Nansemond, and the considerable remnant still existing in 1781 on the Eastern shore and in some of the tidewater "necks," are not noted at all. The main reserve contains 800 acres instead of 300, as stated.[2]

In 1844 the Rev. E. A. Dalrymple collected a few words from the Pamunkey, which, however, with the single exception of the word for "one," *nekkut* (*neeut* in Smith's Vocabulary), are open to grave suspicion.[3] In 1891 Dr Albert S. Gatschet, of the Bureau of American Ethnology, made a short visit to them, and in 1894 Mr John G. Pollard published a brief bulletin describing their condition and form of government at that time.[4]

[1] Jefferson (1781), *Notes on Virginia*, Boston ed., 131, 1802.

[2] In the same paragraph Jefferson states that the Nottoway were then reduced to a few women, not a male being left, although nearly forty years later, according to Morse's official report, there were still 27 on the reservation, several of whom spoke the language. Jefferson's identification of the Monacan as Tuscarora is also incorrect.

[3] In *Historical Magazine*, N. Y., 1st s., II, 182, 1858.

[4] *The Pamunkey Indians of Virginia*, Bulletin 17, Bur. Am. Ethnol., 1894.

In 1889 the present writer had undertaken a study of the Indian history and tribal remains of the south Atlantic region from Delaware river to Savannah river. As a preliminary, 1,000 circular letters, requesting information in regard to Indian local names, ancient remains, and survivors of pure or mixed Indian origin, were sent out over the region under consideration, resulting in the securing of considerable valuable information. This was followed up by correspondence and library investigation, some results of which were published in the *American Anthropologist* from time to time, together with a bulletin publication by the Bureau of American Ethnology in 1894.[1]

Replies from the Eastern shore, where Beverley's statement might make 500 or 600 Indians, were to the effect that the few who remained at the beginning of the last century had become so mixed with negro blood that in the general alarm occasioned by the Nat Turner slave rising in 1831 they had been classed as full negroes and driven from their homes, so that their identity was lost. Later information tends to confirm this; but, as there are still individuals among the Maryland negroes who claim strains of Nanticoke, Piscataway, and Wicocomoco blood, it is possible that others yet keep up the name of Gingaskin, or Accohannock. In this connection it is in place to state that there is undoubtedly a considerable infusion of Indian blood among the negroes of the whole south Atlantic tidewater region.

On the mainland, the circular replies and later correspondence indicated the existence of several bodies and scattered families of Indian descent, besides those having state recognition under the names of Pamunkey and Mattapony. Upon a theory which proved to be correct, it was assumed that the largest bodies of Indian admixture would still be found where the largest tribes had originally resided. Smith, in 1607, estimated six Powhatan tribes as having each more than 100 warriors, viz: Pamunkey (300), Chickahominy (250), Potomac (over 200), Nansemond (200), Nantaughtacund (150), and Wicocomoco (130). Of these the Pamunkey, Nansemond, Chickahominy, and Wicocomoco still kept the name in 1705, and were reported at about 40, 30, 16, and 3 bowmen, respectively,

[1] *The Siouan Tribes of the East*, Bull. 22, Bur. Am. Ethnol., Washington, 1894.

besides four other small bodies.[1] Following this clue, the country east of Richmond and south of Norfolk was visited in 1899 and again in 1901, resulting in the discovery that not only the Pamunkey and Mattapony, but also the ancient Chickahominy and Nansemond, were still represented by several hundred mixed-bloods. Smaller groups of the same mixed pedigree were also heard of, but not visited.

In all of these bands the blood of three races is commingled, with the Indian blood sufficiently preponderating to give stamp to the physiognomy and hair characteristics. It is probable that from intermarriage nearly the same mixture is in all alike, although it does not show equally in the features. Thus, many would pass among strangers as ordinary negroes; a few show no trace of any but white blood; while a few families and individuals might pass as full-blood Indians in any western tribe. Notwithstanding the large percentage of negro blood, the Indian race feeling is strong. This is due largely, according to their own statement, to the fact that intermixture was frequently forced upon them in the old days, with the deliberate purpose of claiming their children for slavery. Their one great dread is that their wasted numbers may lose their identity by absorption in the black race, and against this they have struggled for a full century. As we have seen, it was this cause which led to the dispersal of the Eastern shore remnant in 1831, and harsh measures were enforced upon the other Indians at the same time. In 1859, under the alarm produced by the John Brown raid, they again fell under suspicion, and the Pamunkey, in spite of state recognition as Indians, were temporarily disarmed, while the unorganized bands were subjected to worse treatment. In the Civil war a number joined the Union service as soldiers, guides, or seamen, while some fled to Canada to avoid conscription in the Confederate service. Intermarriage with the negro race is now forbidden by Pamunkey law and frowned upon in the other bands. To prevent annoyance when traveling, under recent Virginia legislation, the Pamunkey now carry official certificates of tribal membership; and for similar reasons the unorganized Chickahominy and Nansemond are now making strong effort for state recognition as Indian tribes, such as is accorded the Pamunkey and Mattapony and the so-called "Croatan Indians" of North Carolina.

[1] See Beverley's statement, already noted.

They have entirely lost their aboriginal language and customs, if we except their devotion to the water, and differ but little from their white neighbors. According to the statements of several persons of middle age, their parents some fifty years ago had conversational knowledge of the old language. Even this knowledge must have been limited, as the present writer, by the most careful search, could find but one old man, William W. Weaver, a Nansemond, from whom even half a dozen words could be obtained. He was then so feeble, mentally and physically, that he could not be questioned with any satisfaction. He died about a year later, in 1902, and with him faded away the last echo of the Powhatan as a living language. From the distribution of the original tribes and their former jealousies, it is probable that the language had several well-marked dialects.

On account of the old man's condition, even the half-dozen words obtained from him needed confirmation by his son, then fifty-three years of age, who claimed to have remembered them from his father. They are given here for what they may be worth, with comparison from the Powhatan vocabularies of Smith and Strachey, and the cognate Pampticough of North Carolina, of Lawson:

	Nansemond	*Smith*	*Strachey*	*Pampticough* (*Lawson*)
One	nĭkătwĭn	necut	nekut	weembot
Two	năkătwĭn	ningh	ninge	neshinnauh
Three	nikwăsăti	nuss	nousough	nish-wonner
Four	toisiăw'	yowgh	yeough	yau-ooner
Five	mĭshă'naw	paranske	——	umperren
dog	marĭmo	——	attemous	

The appended census of the four principal bands, in 1901, was compiled from information furnished in conference by the principal men of each band, and may therefore be considered as an official statement of their membership as recognized by themselves. The figures are probably nearly the same today.

Practically all of them can read and write. All are consistent members of the Baptist Church, maintaining their own church and school organizations; they are self-supporting, industrious, law-abiding, and hospitable, with no paupers or criminals, and constitute in every way a worthy factor in the community.

THE PAMUNKEY

The Pamunkey are the remnant of the nucleus tribe of the old confederacy, and the lineal descendants of Powhatan and his successors. They have maintained their organization as a tribe under colonial and state government, and have kept up more of the Indian form and tradition than any of the others. They have a state reservation of some 800 acres, the same which Jefferson described in 1781, in a bend of Pamunkey river, in King William county, Virginia, with postoffice and railroad station at White House, 24 miles eastward from Richmond. They derive their living almost entirely from the water, taking large quantities of herring and shad by seine, according to the season, with ducks, reedbirds, and an occasional sturgeon for disposal to Baltimore commission houses. Their fields of corn and beans are cultivated chiefly by hired negro labor. They neither vote nor pay taxes, but are governed by an elected chief and council, subject to the supervision of trustees appointed by the state. Deer and wild turkey are still found in their country, and, in continuance of the old colonial allegiance, they make an annual Thanksgiving present of game to the governor of the state. Their chief in 1900 was Theophilus Dennis, who has since been succeeded by George M. Cook, his brother-in-law. They number at home and abroad about 150 souls.

According to the statement of former chief Terrill Bradby of the Pamunkey, aged sixty-six in 1899, the numerous Bradbys of the Pamunkey and Chickahominy tribes all have descent from a white man, his great-grandfather, who, about the Revolutionary period, married a Chickahominy woman, by whom he had three sons, one of whom was Terrill's grandfather.[1]

ALLMOND, E. R. (Mattapony), *w* and 6 *c*.
BRADBY, Wm. Terrill (ex-chief), and 6 *c* and *step-c*; scattered.
BRADBY, Wm. S. (*w* white).
BRADBY, Cruzetta, and 5 *c*.
BRADBY, Riley, and 2 *c*.
BRADBY, James E., *w* and 2 *c*.
BRADBY, Roger, and *w*.
BRADBY, Charles S. (ex-chief), *w* and 4 *c*.
BRADBY, Evans, *m* and 3 *c*.
COLLINS, Simeon, *w* and 6 *c*.
COLLINS, Ellen.
COLLINS, Emma J.
COLLINS, Union, *w* and 4 *c*.

[1] Abbreviations: *m* = mother; *w* = wife; *h* = husband; *s* = son; *d* = daughter; *c* = child or children; *grc* = grandchildren; *grs* = grandson; *b* = brother; *sr* = sister.

COLLINS, John T., *w* and 4 *c*.
COLLINS, Alfonzo (*w* Mattapony); Philadelphia.
COOK, Mindora.
COOK, George M., *m*, *w* and 5 *c*.
DENNIS, Theophilus (ex-chief), and *m*.
DENNIS, John T.
DENNIS, Thomas.
DENNIS, Elizabeth (Philadelphia ?).
HAWKES, Delila (*h* alien mixed-blood); Petersburg.
HOLMES, Richard L., *w* and 6 *c*.
LANGSTON, John (*w* Mattapony), *w* and 9 *c*.
LANGSTON, Lucy A., and 6 *c*.
LANGSTON, Wm., and *w*.
LANGSTON, James H. (Richmond).
MILES, Rev. James P., and 3 *c*.
MILES, Jacob (*w* white), and 5 *c*.
MILES, Robert W., *w* and 5 *c*.
PAGE, A. J., *w* and 1 *c*.
PAGE, Ellen.
PAGE, James E., and 1 *c* (New York).
PAGE, Leroy (Newport News).
SAMPSON, Richard, and 1 *c* (New York).
SAMPSON, Sterling Y. (*w* white), and 1 *c*.
SWETT, W. G., and 4 *c*.
SWETT, George A. (*w* Mattapony), *w* and 1 *c*; Pinner's Point, Norfolk co.
SWETT, Frank.
Others with Mormons in the West.

THE MATTAPONY[1]

The present Mattapony are chiefly an offshoot from the Pamunkey. They have state recognition as a tribe, without citizenship or taxes, and have a small reservation of some 50 acres, with larger personal holdings, on the south bank of Mattapony river, King William county, about 10 miles distant from White House. They live principally by lumbering and farming, and have no chief or council, but combine their affairs with the Pamunkey. They number about 40 souls.

ALLMOND, Thornton, *w* and 3 *c*.
ALLMOND, Caley, *m*, 6 *b* and *sr*.
ALLMOND, Esten, and 1 *c*; also married *d* with 1 *c* in Philadelphia.
COLLINS, Abbie (*h* Pamunkey).
COSTELLO, Norman, and 2 *c*.
COSTELLO, Epharis, *w* and 5 *c*.
LANGSTON, Mary Eliza (*h* Pamunkey).
MAJOR, Lee, *w* and 3 *c*.
REID, Blanche (*h* white), and 1 *c*; in Texas.
TUPPINS, Nannie, 1 *c* and nephew (Baltimore ?).
TUPPINS, Alice.

THE CHICKAHOMINY

The Chickahominy, although without regular organization or state recognition, are the largest of the existing bands, occupying individual holdings along both sides of the Chickahominy in Charles City and New Kent counties, besides about 20 persons in

[1] Accented on first and last syllables: Mat'-ta-po-ny'.

neighboring counties. A few Pamunkey reside with them, and both bands are much intermarried. They divide their time about equally between fishing and farming, according to the season. Within the last few years they are making an effort to effect a tribal organization, under the leadership of William H. Adkins. They number in all about 220 souls, of whom nearly three-fourths bear the family names of Adkins and Bradby.

ADKINS, Wm. H., chief (Bradley's Store P. O., Charles City co.), *w*, *m*, and 7 *c*.

ADKINS, Spotswood, *w* and 8 *c*.

ADKINS, James E., *w* and 11 *c*.

ADKINS, Thomas Allen, *w* and 5 *c*.

ADKINS, Thomas (senior), *w* and 4 *c*.

ADKINS, Henry E., *w* and 11 *c*.

ADKINS, Allen, *w* and 3 *c*.

ADKINS, Aurelius, *w* and 2 *c*.

ADKINS, William, *w* and 7 *c*.

ADKINS, Prince Edward, *w* and 1 *c*.

ADKINS, Tazewell, *w* and 2 *c*.

ADKINS, Edward (Providence Forge P. O., New Kent co.), *w* and 9 *c*.

ADKINS, Robert, *w* and 3 *c*.

BRADBY, Sanford (Bradley's Store P. O., Charles City co.), *w*.

BRADBY, John Williams, *w* and 2 *c*.

BRADBY, Burrell, *w* (a Pamunkey) and 8 *c*.

BRADBY, John A., 1 *c*.

BRADBY, Porterfield, *w* and 3 *c*.

BRADBY, Allen.

BRADBY, Henry Tazewell (Blair's Wharf P. O., Prince George co.); *w* was a Canadian Indian, 6 *c*.

BRADBY, Bolen (Bolling?), Fergusson's Wharf P. O., Isle of Wight co.; *w* white, 1 *s*.

BRADBY, Luella (mouth of Chickahominy, James City co.), 5 *c*.

BRADBY, Maria J. (Providence Forge P. O., New Kent co.), 4 *c*.

BRADBY, Alexander J. (Boulevard P. O., New Kent co.), *w* and 6 *c*.

COTMAN, Robert (Roxbury P. O., Charles City co.; some "foreign" Virginia tribe; grandfather white), *w* and 3 *c*.

HOLMES, Elias (Newport News, Warwick co., from New Kent co.), *w* and 3 *c*.

HOLMES, Irene (Newport News), 2 *sr*.

JEFFERSON, Thomas (Bradley's Store P. O., Charles City co.), 2 *b*, 1 *sr*.

JEFFERSON, Peter (Westover P. O., Charles City co.).

JEFFERSON, Sherman, *w* and 2 *c*.

JONES, John (Bradley's Store P. O.), *w* and 5 *c*.

MILES, Graham (Bradley's Store P. O.), *w* and 8 *c*.

MILES, Graham B. (unmarried nephew of above), 2 *b*, 5 *sr*.

MILES, Harold (a Pamunkey, Newport News), *w*.

MILES, Jesse (Westover P. O., Charles City co.).

STUART, John, and *w* (Providence Forge P. O., New Kent co.).

SWETT, John J., *w*, *m*, and 1 *c*.

THOMPSON, William (half-brother of Jesse Miles), Westover P. O.

WYNNE, Ferdinand (a Pamunkey with Chickahominy *w*, Providence Forge, New Kent co.), *w* and 11 *c*.

WYNNE, Winslow (Pamunkey, brother of Ferdinand Wynne, widower of Chickahominy *w*), 1 *d* (adopted in Pamunkeys), 2 *s*; Tunstall P. O., New Kent co.

THE NANSEMOND

The Nansemond have no state recognition or tribal organization, and reside chiefly in the country southwest from Portsmouth and Norfolk, in Norfolk county. They are all truck farmers, shipping their produce to Norfolk commission houses. Many also have served from time to time as sailors on coasting vessels. Although without any regular chief, their principal man is probably A. A. Bass, of Bowers Hill, Norfolk county. They number about 180 souls. The comparatively large number of family names is due to the frequent intermarriage of children of the original stock, chiefly Bass and Weaver, with "whites" in Portsmouth and elsewhere. In consequence of this dispersion, those at home have lost trace of the names of some of the younger generation abroad, so that the whole number may fairly be placed at 200 of the mixed blood.

BASS, A. A. (*w* white), and 8 *c*.
BASS, Jesse L. (*b* of above), *w* white.
BASS, Azriah (*b* of above), *m* and 6 *c*.
BASS, Winfield.
BASS, Paul, and *w*.
BASS, Eli N., and *w*.
BASS, James N. (*w* white), and 2 *c*.
BASS, J. T. (*w* white).
BASS, Fred.
BASS, Josephine.
BASS, Iverson (*b* of A. A. Bass), *w* white, and 3 *c*.
BATEMAN, Cornelia (*h* white), 2 *c* and 3 *grc*. Some in Portsmouth.
BATEMAN, Charles (*f* white); Baltimore.
BATEMAN, Lewis (*f* white); Suffolk.
BATEMAN, Hal (*f* white); Suffolk.
BISSELL, Edward (*w* white), 3 *c*.
BISSELL, Walter (*m* white).
BISSELL, Mit (*m* white).
BOND, Ellen (*h* white), and 5 *c*; 3 others married to "whites".
BOND, 2 *grs* of Ellen Bond (*m* white).
BOND, Lemwood, and 2 *s* (*m* white).
BRIGHT, Elizabeth (*h* white), and 4 *c*.
BRIGHT, Louisa, and 5 *c*.
BRIGHT, Harlan.
BRIGHT, Eva, and 2 *b* (*grc* of Elizabeth Bright, *m* white).
BRADY, Ella, and 1 *c* (*h* white).
CAPLE, Emma, and 1 *c* (*h* white).
COLLINS, Kerry (*w* white); Portsmouth.
COLLINS, John, and — *c*; Baltimore.
COLLINS, "Bird", and — *c*; Baltimore.
COLLINS, Maggie, and — *c*; Baltimore.
CRAIGINS, Mary (*h* white), and 3 *c*; Savannah.
GAYLORD, Maggie (*h* white), and 3 *c*.
GRAY, Harriet Ann (*h* white), and 1 *c*; Portsmouth.
GREEN, Jurutha (*h* white); Portsmouth.
HARMON, Edward (white? his wife is a Weaver), *w* and 5 *c*; Portsmouth.
HARMON, Edward, Jr (*grs* of above); Portsmouth.

HOLLOWAY, Missouri (*h* white), and 10 *c*; Brambleton.
HOWARD, Sarah (*h* white), and 5 *c*.
JONES, Emma (*f* white).
OKAY, Maggie (*h* white), and 2 *c*; Portsmouth.
OSBORN, Emma (*h* white).
PORTER, Amanda (*h* white), and 3 *c*.
PRICE, John (*f* and *w* white), and 3 *c*.
PRICE, George (*f* and *w* white), and 2 *c*; Portsmouth.
ROWLAND, Fannie (*h* white), and 1 *c*; Portsmouth.
SAWYER, Emerson (*w* white), and 2 *c*; Brambleton.
SAWYER, Samuel (*w* white), and 5 *c*; Baltimore.
SCOTT, Gertie (*h* white).
SEBASTIAN, Ann.
SIMCOE, Mary (*h* white), and 2 *c*.
WEAVER, W. W. (last speaker of the language, died 1902, aged 84), and *w*.
WEAVER, James E., *w* and 4 *c*.
WEAVER, W. W. Jr; Portsmouth.
WEAVER, Cornelius (*w* white), and 4 *c*; Philadelphia.
WEAVER, Henrietta.
WEAVER, Lavinia, and 3 *c*; Baltimore.
WHITE, Emma (*h* white), and 2 *c*; Portsmouth.
WHITE, Lovey Ann (*h* white), and 3 *c*; Portsmouth.
WILKINS, Molly (*h* white).
WILLIAMS, Drusilla; Portsmouth.

OTHER BANDS

Besides the four larger bands, we have information orally and by correspondence of several other small groups or detached families of mixed-blood stock of the same Powhatan origin, numbering altogether possibly 120 souls. What seems to be the largest of these, according to Pamunkey information, resides on Mattapony river, about Aylett postoffice, in upper King William county, the principal family names being Adams and Holmes. They are said to number about 40 in all, and to be in very backward condition as compared with the Pamunkey, with whom they have little communication, although sometimes visiting the Mattapony.

Another band of nearly the same number is situated south of Rappahannock river, about Lloyd or Battery postoffice, in upper Essex county, the most common family name being Nelson. They are said to show as much of Indian blood as the Pamunkey, holding themselves apart from both white and negro, and are represented as fairly prosperous and intelligent. They are probably the descendants of the old Nantaughtacund tribe, known later, with others, under the name of Portobacco.

Another small group is reported on the head of Pocoson river, York county, northwest from Hampton, the principal family name being Wise.

On the north side of York river, at Gloucester Point, Glouces[illegible] county, are the descendants of a family of Sampsons, whose anc[illegible] tors came originally from the Pamunkey reservation.

On the Eastern shore there are said to be a very few mix[illegible] bloods still living in the neighborhood of Accomac Courthou[illegible] (Drummondtown), in Accomac county; and also a few bearing t[illegible] family name of Miles near Fisher's Inlet, in southern Northampt[illegible] county.

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ERNST FÖRSTEMANN

We, as American anthropologists, owe a great debt to Dr Ernst Förstemann, the foremost worker in the field of the hieroglyphic writing of Central America, and it is with very great regret that we learn of his death on November 4, 1906, in Charlottenburg, Germany.

Dr Förstemann was born in Danzig in 1822,[1] and during the first half of his life he was engaged primarily in the study of philology, devoting himself especially to research on German place names. In 1865 he resigned the position of librarian in Wernigerode, Saxony, to accept that of head librarian of the Royal Public Library at Dresden. It is to the direct result of this change that we owe the great advance in the knowledge of the Central American hieroglyphic writing.

The Royal Library at Dresden had long contained a curious manuscript written on a long strip of fiber cloth, painted on both sides, and folded together like a screen. This had been brought back from Italy by a former librarian and was labeled, "An invaluable Mexican book with hieroglyphic figures." It had attracted some attention as a curiosity, but no advance was made in its interpretation.[2] To Dr Förstemann is due the honor of having presented to the world for the first time an elucidation of this manuscript, the so-called *Dresden Codex*, the highest intellectual achievement connected with the pre-Columbian culture of the New World.

In 1880 Förstemann brought out a colored reproduction of the 74 pages of this Maya document. It is only from about this time, and owing mainly to the researches of Dr Förstemann, that the knowledge of the Central American hieroglyphic writing may be

[1] The writer is indebted for the various facts in the life of Dr Förstemann to an appreciation by Dr Walter Lehmann, published in *Globus*, vol. XC, no. 22, December 13, 1906.

[2] Humboldt recognized its importance, and the pages were reproduced in colors in vol. III of Kingsborough's *Mexican Antiquities*, London, 1831–1848.

said fairly to have begun. Before this, much was pure supposition, and many were the theories woven about the Maya inscriptions.[1] To the penetrating investigations of Dr Förstemann we are indebted for the major part of our most important points of departure in all studies of the hieroglyphic writing of Central America.

The publication of a faithful copy of the pages of Dresden Codex (1880,[2] 1892 b) was soon followed by exhaustive interpretations of the manuscript itself (1885, 1886, 1887, 1891, 1892, 1894, 1895, 1897, 1898, 1900). The value placed by American students on the latest and most complete study of the Codex (1901) is shown by an English translation, revised by the author, which has appeared within the last month as No. 2 of Volume IV of the Papers of the Peabody Museum (1906). Several of Dr Förstemann's briefer articles have also been translated into English, appearing in Bulletin 28 of the Bureau of American Ethnology (1904 c).

Dr Förstemann did not limit himself however to the study of the Dresden manuscript, but published commentaries on both the other Maya codices, the Tro-Cortesianus (1902, 1903 a) and the Peresianus (1903). The elucidation of these three manuscripts is the greatest single contribution to the study of Central American hieroglyphic writing.

A large number of his separate articles enter into a discussion of special features and phases of the codices, and the many series of numbers in the Dresden document often showing calculations extending into the millions and expressed by the system of bars and dots (1887, 1891, 1894, 1895, 1897, 1898, 1905 a, 1905 b, 1905 c, 1906 a). The mathematical mind of Dr Förstemann was especially fitted to work out the chronology of the ancient time counts (1891 a, 1892 a, 1893, 1894 a, 1894 b, 1897 c, 1902 c, 1904, 1905 a, 1905 d) and more especially the elaborate astronomical calculations which show what height of intellectual activity was attained by the Mayas (1894 c, 1901 a, 1901 b, 1904 d, 1906 b, and all the references under the long number counts). The sacred period of 260 days, expressed many times throughout the codices,

[1] The Landa manuscript published by Brasseur de Bourbourg in 1864 is of course the very first starting point in the study of the glyphs.

[2] The dates refer to specific articles in the bibliography at the end.

was carefully worked out by him (1895 b, 1901, 1902, 1904 a, 1906).

The study of the different gods represented in the codices, although not essentially his special line of investigation (compare 1897 a), was nevertheless represented in his writings (1898 b, 1901 c, and the commentaries 1901, 1902, 1903).

The carved inscriptions in stone which, together with the three codices, furnish the greater part of the material for a study of the glyphs, were also investigated by Dr Förstemann — the tablets at Palenque (1897 a, 1899, 1899 a, 1902 a, 1903 b), the inscriptions from the ruins on the Usumacinta river (1902 b, 1903 c), an inscription at Copan (1904 b), the only initial series which has been found up to the present time in northern Yucatan, that at Chichen Itza (1905), and the Leyden plate (1903 d).

With the possible exception of the question of the phoneticism of the Maya hieroglyphics, there is hardly a side of the Maya writing that is not touched upon by his investigations. As Dr Lehmann has truthfully said, "What Dr Förstemann had in mind in all these labors was the desire first of all to arouse interest, if possible to call forth a reply, in order to incite his fellow-laborers to more energetic coöperation." He was much encouraged during the last years of his life by the interest taken in the field of his researches, especially in America, and it is in part owing to this support, coöperation, and the recognition of the value of his work as shown by the translations of many of his articles into English that he was made to feel that he was no longer alone in his interest in the study of Central American hieroglyphic writing, that his long years of patient labor were bearing fruit.

The following is a fairly complete bibliography of Dr Förstemann on the hieroglyphic writing of Central America:

1880. Die Mayahandschrift der Königlichen öffentlichen Bibliothek zu Dresden. 4°, pp. XVII, 74 colored plates.
Second edition, 4°, pp. XIV, 74 colored plates, Dresden, 1892.

1885. Der Maya-Apparat in Dresden. (In *Centralblatt für Bibliothekwesen*, vol. II, 181–192, Leipzig.)

1886. Erläuterung zur Mayahandschrift der Königlichen öffentlichen Bibliothek zu Dresden. 4°, pp. 80, Dresden.

1887. Zur Entzifferung der Mayahandschriften, I. Die in rote Kränze eingeschlossen Zahlen (Dresden Codex). Die grossen Zahlen (Dresden Codex). Die Kalenderdaten (Dresden Codex). 8°, pp. 14, Dresden. Also in *Compte rendu, Congrès international des Américanistes.* 7me Session, Berlin, 1890, pp. 739–753. English translation in *Bureau of Ethnology Bulletin 28*, pp. 397–407, Washington, 1904.

1891. Zur Entzifferung der Mayahandschriften, II, Blatt 61–64, Blatt 69–73, (Dresden Codex). pp. 19, Dresden.
English translation in *Bureau of Ethnology Bulletin 28*, pp. 409–422, Washington, 1904.

1891 a. Zur Maya-Chronologie. (In *Zeitschrift für Ethnologie*, vol. 23, pp. 142–155.)
English translation in *Bureau of Ethnology Bulletin 28*, pp. 475–489, Washington, 1904.

1892. Zur Entzifferung der Mayahandschriften, III, Schildkröte und Schnecke in der Mayaliteratur. 8°, pp. 8, Dresden.
English translation in *Bureau of Ethnology Bulletin 28*, pp. 423–430, Washington, 1904 b.

1892 a. Neuestes zur Kulturgeschichte (Maya-Chronologie betreffend). (In *Dresdener Journal*, 25 October, no. 249.)

1892 b. Second edition of 1880.

1893. Die Zeitperioden der Mayas. (In *Globus*, vol. LXIII, no, 2, pp. 30–32.)
English translation in *Bureau of Ethnology Bulletin 28*, pp. 493–498, Washington, 1904.

1894. Zur Entzifferung der Mayahandschriften, IV, Blatt 24 der Dresdener Mayahandschrift. 8°, pp. 17. Dresden.
English translation in *Bureau of Ethnology Bulletin 28*, pp. 431–443, Washington, 1904.

1894 a. Zum mittelamerikanischen Kalender. (In *Globus*, vol. LXV, no. 1, p. 20.)
English translation in *Bureau of Ethnology Bulletin 28*, pp. 517–519, Washington, 1904.

1894 b. Die Mayahieroglyphen. (In *Globus*, vol. LXVI, no. 5, pp. 78–80.)
Second article in vol. LXXI (1897), no. 5, pp. 78–81. (See 1897 c.)
English translation of both articles in *Bureau of Ethnology Bulletin 28*, pp. 501–513, Washington, 1904.

1894 c. Die Plejaden bei den Mayas. (In *Globus*, vol. LXV, no. 15, p. 246.)
English translation in *Bureau of Ethnology Bulletin 28*, pp. 523–524, Washington, 1904.

1894 d. Das Gefäss von Chamá. (In Verhandlungen der Berliner Anthropologischen Gesellschaft, pp. 573–576, in *Zeitschrift für Ethnologie*, vol. 26.)
English translation in *Bureau of Ethnology Bulletin 28*, pp. 647–650, Washington, 1904.

1895. Entzifferung der Mayahandschriften, V, Zu Dresd. 71–73 und 51–58. 8°, pp. 12, Dresden.
English translation in *Bureau of Ethnology Bulletin 28*, pp. 445–453, Washington, 1904. (Note also 1905 c.)

1895 a. Anzeige von Daniel G. Brinton a primer of Mayan hieroglyphics. (In *Globus*, vol. LXVII, p. 147.)

1895 b. Das mittelamerikanische Tonalamatl. (In *Globus*, vol. LXVII, no. 18.)
English translation in *Bureau of Ethnology Bulletin 28*, pp. 527–533, Washington, 1904.

1896. Neue Mayaforschungen. (In *Globus*, vol. LXX, no. 3, pp. 37–39.)
English translation in *Bureau of Ethnology Bulletin 28*, pp. 537–543, Washington, 1904.

1897. Zur Entzifferung der Mayahandschriften, VI, Dresd. 31a bis 32a. 8°, pp. 9, Dresden.
English translation in *Bureau of Ethnology Bulletin 28*, pp. 455–461, Washington, 1904.

1897 a. Die Kreuzinschrift von Palenque. (In *Globus*, vol. LXXII, no. 3, pp. 45–49.)
English translation in *Bureau of Ethnology Bulletin 28*, pp. 547–555, Washington, 1904.

1897 b. Anzeige von Schellhas die Göttergestalten der Maya-Handschriften. (In *Zeitschrift für Ethnologie*, vol. 29, pp. 168–170.)

1897 c. Die Mayahieroglyphen. (In *Globus*, vol. LXXI, no. 5, pp. 78–81.)
(An article (1894 b) with the same title appeared in *Globus*, vol. LXVI, no. 5, pp. 78–80.)
English translation of both articles in *Bureau of Ethnology Bulletin 28*, pp. 501–513, Washington, 1904.

1898. Zur Entzifferung der Mayahandschriften, VII, Die Reihe Dresd. 51 bis 58. 8°, pp. 12, Dresden.
English translation in *Bureau of Ethnology Bulletin 28*, pp. 463–473, Washington, 1904.

1898 a. Die Tagegötter der Mayas. (In *Globus*, vol. LXXIII, nos. 9 and 10.)
English translation in *Bureau of Ethnology Bulletin 28*, pp. 559–572, Washington, 1904.

1899. Aus dem Inschriftentempel von Palenque. (In *Globus*, vol. LXXV, no. 5, pp. 77–80.)
English translation in *Bureau of Ethnology Bulletin 28*, pp. 575–580, Washington, 1904.

1899 a. Drei Inschriften aus Palenque. (In *Globus*, vol. LXXVI, no. 11, pp. 176–178.)
English translation in *Bureau of Ethnology Bulletin 28*, pp. 583–589, Washington, 1904.

1900. Drei Mayahieroglyphen. (In *Zeitschrift für Ethnologie*, vol. 32, pp. 215–221.)

1901. Commentar zur Mayahandschrift der Königlichen öffentlichen Bibliothek zu Dresden. 8°, pp. 176, Dresden.

English translation (revised by author) in *Papers of Peabody Museum*, vol. IV, no. 2, pp. 266, Cambridge, Oct. 1906, 8°.

1901 a. Der Nordpol bei Azteken und Maya's. (In Verhandlungen der Berliner Anthropologischen Gesellschaft, pp. 274–277, in *Zeitschrift für Ethnologie*, vol. 33.)

1901 b. Der Merkur bei den Mayas. (In *Globus*, vol. LXXIX, no. 19, pp. 298–299.)

1901 c. Der Mayagott des Jahresschlusses. (In *Globus*, vol. LXXX, no. 12, pp. 189–192.)

1902. Commentar zur Madrider Handschrift (Codex Tro-Cortesianus). 8°, pp. 160, Danzig.

1902 a. Die Kreuzinschrift von Palenque. (In Verhandlungen der Berliner Anthropologischen Gesellschaft, pp. 105–121, in *Zeitschrift für Ethnologie*, vol. 34.) Note previous article, 1897 a.

1902 b. Eine historische Maya-Inschrift. (In *Globus*, vol. LXXXI, no. 10, pp. 150–153.) (Piedras Negras.)

1902 c. Der zehnte Cyklus bei den Mayas. (In *Globus*, vol. LXXXII, no. 9, pp. 140–143.)

1903. Commentar zur Pariser Mayahandschrift (Codex Peresianus). 8°, pp. 32, Danzig.

1903 a. Zur Madrider Mayahandschrift. (In Verhandlungen der Berliner Anthropologischen Gesellschaft, pp. 771–790, in *Zeitschrift für Ethnologie*, vol. 35.)

1903 b. Zusammenhang zweier Inschriften von Palenque. (In *Globus*, vol. LXXXIII, no. 18, pp. 281–284.)

1903 c. Inschriften von Yaxchilan. (In *Globus*, vol. LXXXIV, no. 5, pp. 81–84.)

1903 d. Die Nephritplatte zu Leiden. (In Verhandlungen der Berliner Anthropologischen Gesellschaft, pp. 553–557, in *Zeitschrift für Ethnologie*, vol. 35.)

1904. Die Lage der Ahaus bei den Mayas. (In *Zeitschrift für Ethnologie*, vol. 36, pp. 138–141.)

1904 a. Liegen die Tonalamatl der Mayahandschriften in bestimmten Jahre. (In Verhandlungen der Berliner Anthropologischen Gesellschaft, pp. 659–667, in *Zeitschrift für Ethnologie*, vol. 36.)

1904 b. Die Stela J. Copan. (In *Globus*, vol. LXXXV, no. 23.)

1904 c. Bulletin 28 of the Bureau of American Ethnology, 8°, Washington. Contains English translations of several articles by Dr Förstemann, pp. 393–589, 647–650.

1904 d. Die Astronomie der Mayas. (In *Das Weltall*, vol. IV, p. 353–361, 380–385.)

1904 e. Vergleichnung der Dresdener Mayahandschrift mit der Madrider. (In *Globus*, vol. LXXXVI, no. 23, pp. 369–371.)

1905. Die spätesten Inschriften der Mayas. (In *Globus*, vol. LXXXVII, pp. 272–273.) (Saccana and Chichen Itza.)

1905 a. Mayahieroglyphen als Bezeichnung für Zeiträume. (In *Das Weltall*, vol. IV, part 2, 15 October, p. 13–23.)

1905 b. Die Schlangenzahlen der Dresdener Mayahandschrift. (In *Das Weltall*, vol. V, part 11, pp. 199–203.)

1905 c. Zwei Hieroglyphenreihen in der Dresdener Mayahandschrift. (In *Zeitschrift für Ethnologie*, vol. 37, pp. 265–274.) (Treats of pp. 51–58, 71–73, of the Codex. 1895 is an earlier study of the same pages.)

1905 d. Mayahieroglyphen als Bezeichnung für Zeiträume. (In *Das Weltall*, vol. VI, part 2, 15 October 19, pp. 13–23.)

1906. Commentary on the Maya manuscript in the Royal Public Library of Dresden. (In *Papers of the Peabody Museum*, Cambridge, vol. IV, no. 2, pp. 266, 8°.) An English translation of 1901 revised by the author.

1906 a. Die Millionenzahlen im Dresdensis. (In *Globus*, vol. LXXXVIII, no. 8, pp. 126–128.)

1906 b. Den Kampf der Gestirne (?). (In *Das Weltall*, vol. VI, pp. 251–257.)

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ANTHROPOLOGY AT THE NEW YORK MEETING

WITH PROCEEDINGS OF THE AMERICAN ANTHROPOLOGICAL ASSOCIATION FOR 1906

By GEORGE GRANT MACCURDY

The joint meeting of Section H of the American Association for the Advancement of Science, the American Anthropological Association, and the American Folk-Lore Society, held at Columbia University, New York City, December 27th, 1906, to January 1st, 1907, was notable for the number of working anthropologists present as well as for the length and excellence of the program. Coming, as it did, so soon after the International Congress of Americanists in Quebec, fear had been expressed that the New York program might be but the gleanings of a field already well harvested. That new fields were entered may be readily seen by a survey of the program, which included fifty-six numbers in addition to the addresses of the President of the Folk-Lore Society and of the retiring Vice-president of Section H.

Business and Social Functions

The Council of the American Anthropological Association and the Sectional Committee of Section H held a joint business meeting on December 27th, at which the retiring Vice-president of Section H, Dr George Grant MacCurdy, presided.

Professor William H. Holmes presented an official communication from the Anthropological Society of Cologne, Germany, inviting the American Anthropological Association and members of Section H to take part in the International Congress of Anthropology to be held at Cologne in August, 1907; and recommended that the chair appoint a committee to further the interests of the Cologne Congress.[1] On formal motion to that effect the chair appointed the following committee: W. H. Holmes (chairman), Franz Boas, Charles Peabody, W J McGee, F. W. Putnam, A. L. Kroe-

[1] The Congress will convene August 4–8, and at Strassburg instead of at Cologne.

ber, Karl von den Steinen, G. B. Gordon, G. A. Dorsey, C. V. Hartman, J. C. Merriam, G. F. Wright, J. Walter Fewkes, Stewart Culin, David Boyle, A. Hrdlicka, F. M. Palmer, C. A. Peterson, S. Hagar, and G. G. MacCurdy, (ex-officio).

The question of the advisability of changing the name of Section H, Anthropology, so as to read "Section H, Anthropology and Psychology," came up for discussion. On motion the chair appointed a special committee with power to act and to submit their action for the approval of the Council of the American Association for the Advancement of Science: Franz Boas (chairman), W. H. Holmes, A. L. Kroeber, and J. McK. Cattell. The resolution submitted to the Council by this Committee is as follows:

First, The recommendation of the Committee on Policy to change the designation of Section H from "Section of Anthropology" to "Section of Anthropology and Psychology" is approved.

Second, The Committee recommend to the consideration of the Council and of the Committee on Policy the desirability of a better coördination of the sections and of the affiliated societies, particularly the desirability of having the president and the secretary of one of the affiliated societies act at the same time as sectional vice-president and sectional secretary. The Committee also recommend to the Council and to the Committee on Policy a consideration of the question whether, in view of the close affiliation of scientific societies, the discontinuance of sectional meetings and of the sectional organization may not be desirable.

In harmony with the foregoing resolution, the Section deviated from its custom in regard to officers and named for Vice-president the president of an affiliated society, the list of sectional officers elected, subject to the approval of the General Committee of the American Association for the Advancement of Science, being —

Vice-president, Franz Boas.
Member of the Council, W J McGee.
Member of the Sectional Committee to serve five years, W. H. Holmes.
Member of the General Committee, M. H. Saville.

On December 28th, a meeting of the Council of the American Anthropological Association alone was held, at which the senior Vice-president in attendance, Professor W. H. Holmes, presided.

Members of the Council present were: W J McGee, W. H. Holmes, F. Boas, B. T. B. Hyde, F. W. Hodge, A. L. Kroeber, M. H. Saville, G. B. Gordon, H. I. Smith, F. Baker, G. H. Pepper, C. Peabody, G. G. MacCurdy. A letter from the President, Professor F. W. Putnam, was read, expressing deep regret that ill health had prevented his being present, asking that he be not considered for reelection to the office of President which he had held for the last two years, and conveying his cordial greetings to all present. The Secretary was instructed to draft a suitable response to Professor Putnam's letter.

The report of the Secretary, Dr George Grant MacCurdy, was read. It included a list of the members who had died [1] during the year — Dr Alfredo Chavero, Dr Weston Flint, Walter S. Logan, and Horatio Nelson Rust.

Resolutions on the death of Alfredo Chavero, prepared by Dr A. M. Tozzer, were read and ordered spread on the minutes of the Council:

Resolved, That in the death of Licenciate Don Alfredo Chavero on October 25th, 1906, the cause of Mexican Archeology has lost a powerful exponent.

Resolved, That we, the members of the American Anthropological Association deeply lament the death of Dr Chavero and that we enter upon our records the deep sense which we entertain of his accomplishments and of his work in the field of Mexican Archeology.

Resolved, That the Secretary of the Association be directed to send a copy of these resolutions to Señora Chavero and members of her family.

Twenty-four new members [2] were elected:

P. S. Sparkman, Dr Paul R. Baer, Rev. H. R. Voth, A. H. Blackiston, Lorenzo Hubbell, Rev. Dr Charles A. Mitchell, A. T. Sinclair, William J. Andrus, Dr Francis W. Kelsey, M. R. Harrington, Alanson Skinner, William K. Bixby (life member), Dr R. A. Douglas-Lithgow, Frank Walters, Dr Karl Sellers Kennard, Dr Lee H. Smith, Dr Robert Bennett Bean, Haldeman O'Connor, Professor Henry Montgomery, Mrs Evelyn MacCurdy Salisbury, George Reynolds, Miss Georgiana G. King, D. S. Adams.

[1] William Wells Newell died January 21st, 1907.

[2] Their addresses appear in the official list of members at the close of this number.

The Secretary wishes to thank all those who have helped to increase the list of members and to urge all those who have not done so, each to propose at least one new name for membership during the current year. They can be aided in so doing by consulting the printed list of members in this issue.

A motion to give members of Section H the same privileges as members of the American Anthropological Association in all sessions for the reading of papers was adopted.

Two communications were presented from the Secretary of the San Francisco Public Library tendering a resolution of thanks to the Assciation for duplicating its file of the *American Anthropologist* lost by fire.

The Secretary was directed to thank Dr Nicolas León for copies of his *Foc-Lor Mexicano* presented to the Association.

The Grand Rapids Public Library, Grand Rapids, Michigan, was elected to membership in the Association with authority to appoint a delegate to represent the Library at meetings of the Association.

A letter from Miss Grace Nicholson of Pasadena, California, was read, telling of her work in collecting valuable ethnographical materials and in securing complete legends, stories, designs, ceremonies, string-figures, etc. of the Pomo Indians. The Secretary was instructed to express to Miss Nicholson the Association's appreciation of what she is accomplishing along these lines.

It was voted that the Secretary be the keeper of the grand prize awarded to the American Anthropological Association by the Louisiana Purchase Exposition for the Association's organ, the *American Anthropologist.*

The motion that a vote of thanks be sent to Mrs Lucy E. Peabody of Denver, Colorado, for her valuable services in securing the passage by Congress of the bill creating the Mesa Verde National Park, was carried. The resolutions, drafted by Messrs E. L. Hewett, James Mooney, and F. W. Hodge, are:

Whereas, The American Anthropological Association has repeatedly placed itself on record as urging the creation by Congress of the Mesa Verde National Park in Colorado until such action was finally taken by the Fifty-ninth Congress, and

Whereas, It is known to this body that the accomplishment of this

object was due in great measure to the untiring efforts of a member of this Association, Mrs Lucy E. Peabody, of Denver, Colorado. Therefore,

Be it Resolved, That the American Anthropological Association recognizes in the securing of this national measure for the preservation of the great monuments of ancient culture in southern Colorado an exceptionally noteworthy service to science, and in testimony of its appreciation of such service hereby extends to Mrs Lucy E. Peabody a vote of thanks.

It was moved that a delegate[1] be appointed to confer with like delegates from other affiliated societies and to represent the American Anthropological Association in matters pertaining to coöperation with the Carnegie Institution.

The report of the Treasurer, Mr B. T. B. Hyde, was read and referred to the Auditing Committee. This Committee, consisting of G. H. Pepper (chairman), M. H. Saville, and Harlan I. Smith, announced that the accounts of the Treasurer are correct and moved the adoption of his report, which follows:

TREASURER'S REPORT

Receipts

Balance from 1905	$699.88	
From Anthropological Society of Washington for *American Anthropologist*, vol. VII, no. 4; vol. VIII, nos. 1 and 2	276.06	
From American Ethnological Society for *American Anthropologist*, vol. VIII, nos. 1 and 2	135.22	
Annual dues	983.53	
Annual subscriptions to *American Anthropologist*	704.17	
Sale of back numbers and extra copies, including *Memoirs*	256.80	
Publication Fund: Annual subscriptions	150.00	
Special illustration	115.00	
Authors reprints (at cost)	128.31	
American Folk-Lore Society, one-third printing of Ithaca program	5.50	$3,454.47

Expenditures

For printing, binding, and mailing *American Anthropologist*, vol. VII, no. 4; vol. VIII, nos. 1 and 2	$1,546.26	
Insurance on back numbers	27.50	

[1] Dr A. L. Kroeber was appointed.

Special illustration for *Memoir*		50.00	
Editorial expenses		239.15	
Illustrations for *American Anthropologist*		298.18	
Treasurer's expenses		117.89	
Subscriptions returned		6.50	
Secretary's expenses		39.95	
Printing of stationery, etc		21.75	
American Ethnological Society for adjustment of membership dues	$10.00		
Balance of loan account	7.49	17.49	
Expenses in connection with "Periodical Literature"		10.00	2,374.67
Balance			$1,079.80[1]

Loan Account of American Anthropological Association with the American Ethnological Society.

Balance due as per last report	$74.49	
Paid January 18, 1906		$ 7.49
Credited for *American Anthropologist*, vol. VII, no. 4		67.00
	$74.49	$74.49

In the annual election, the Association accepted the recommendations of the Council, which are as follows:

President: Professor Franz Boas, New York.
Vice-president, 1910: Dr George A. Dorsey, Chicago.
Vice-president, 1909: Mr Clarence B. Moore, Philadelphia.
Vice-president, 1908: Professor W. H. Holmes, Washington.
Vice-president, 1907: Miss Alice C. Fletcher, Washington.
Secretary: Dr George Grant MacCurdy, New Haven.
Treasurer: Mr B. Talbot B. Hyde, New York.
Editor: Mr F. W. Hodge, Washington.

Council: W J McGee, F. W. Putnam, F. Boas, G. A. Dorsey, Alice C. Fletcher, W. H. Holmes, C. B. Moore, G. G. MacCurdy, B. T. B. Hyde, F. W. Hodge (*ex-officio*); C. P. Bowditch, A. F. Chamberlain, S. Culin, R. B. Dixon, J. W. Fewkes, G. B. Gordon (1910); F. Baker, L. Farrand, B. Laufer, J. D. McGuire, J. Mooney, C. Peabody (1909); G. H. Pepper, M. H. Saville, H. I. Smith, F. Starr, J. R. Swanton, G. G. Heye (1908); E. L. Hewett, J. N. B. Hewitt, W. Hough, A. Hrdlicka, A. L. Kroeber, O. T. Mason (1907).

[1] Bills for printing vol. VIII, nos. 3 and 4, of the *American Anthropologist*, and vol. I, part 1, of the *Memoirs* of the Association had not been received at the time this report was submitted, hence the apparently large balance.

The incoming President, Professor Boas, has appointed committees as follows:

Committee on Program: G. G. MacCurdy (chairman), F. Boas, F. W. Hodge, A. L. Kroeber.

Committee on Finance: B. T. B. Hyde, Stanley McCormick, G. G. MacCurdy, W. H. Furness, 3d.

Committee on Publication: The names of the members of this committee appear on the third page of the cover of this number of the *Anthropologist.*

Committee on Policy: F. Boas (chairman), W J McGee, F. W. Putnam, C. P. Bowditch, G. A. Dorsey, F. W. Hodge, A. L. Kroeber, C. Peabody.

Committee on American Archeological Nomenclature: C. Peabody (chairman), J. H. Wright, W. K. Moorehead, F. W. Hodge, J. D. McGuire.

Committee on Book Reviews: F. W. Hodge (chairman), A. F. Chamberlain, R. B. Dixon, G. B. Gordon, C. Wissler.

Committee on the Concordance of American Mythologies: F. Boas (chairman), J. R. Swanton, A. L. Kroeber.

Committee on Nomenclature of Indian Linguistic Families North of Mexico: F. W. Hodge (chairman), W. H. Holmes, F. Boas, A. L. Kroeber, R. B. Dixon, G. A. Dorsey, J. Mooney.

Committee on the Preservation of American Antiquities: W. H. Holmes (chairman), E. L. Hewett (secretary), G. A. Dorsey, Alice C. Fletcher, G. G. MacCurdy, G. B. Gordon, A. L. Kroeber, M. H. Saville, F. W. Putnam, S. Culin, C. V. Hartman.

To represent the Association in the Council of the American Association for the Advancement of Science: W J McGee, W. H. Holmes.

To represent the Association on the Joint Committee on Grants from the Carnegie Institution: A. L. Kroeber.

A number of social functions were arranged by the local executive committee for the American Association for the Advancement of Science and the affiliated societies.

The president of Columbia University received in Earl Hall from 9 to 11 o'clock on the evening of December 27th.

A luncheon was given at the College of the City of New York, 138th st. and Amsterdam ave., on December 29th, with addresses preceding, and an inspection of the new buildings following.

An invitation was extended by the Board of Trustees of the American Museum of Natural History to be present at the ceremonies attending the unveiling of the busts of ten American men of science, presented to the Museum by Mr Morris K. Jesup, which took place on the afternoon of the twenty-ninth.

On the evening of the twenty-ninth there was a reception at the American Museum of Natural History by the Trustees of the Museum and the New York Academy of Sciences, with an exhibition of scientific progress by the Academy, including demonstrations and short addresses.

A dinner and smoker was given by the American Ethnological Society on Friday evening, December 28th, at the Explorer's Club, 23 West 67th street, to the American Anthropological Association. After the dinner those present were invited to the Knabe Building to inspect a noteworthy archeological collection made by Professor M. H. Saville in Ecuador for Mr George G. Heye.

Addresses and Papers

Dr A. L. Kroeber's address as President of the American Folk-Lore Society was on the "Musical Systems of the Indians of California." Myth, ceremony, and song are fused into one among the Mohave. The Indian music of California is noted for its simplicity. The elements are few and repeated endlessly; but the repetition is accompanied by slight variations that may be detected by the accustomed ear. The elements with variations were shown by means of lantern slides and the phonograph. Dr Kroeber's studies included the Mohave Yelak, a myth told in song (25 songs), the Mohave Nyohaiva (6 songs) and the Mohave Raven (4 songs). He also gave by way of comparison a Kwakiutl song, a Yurok Deerskin Dance Song, and a Yuki Creator Song.

The address of Dr George Grant MacCurdy, retiring Vice-president of Section H, was on "Some Phases of Prehistoric Archeology." Two phases only were discussed — the eolithic question and paleolithic mural decorations. These subjects more than any other have occupied the attention of European archeologists during the last decade. As regards eoliths the differences between intentional chipping and that due to fortuitous natural collisions may

bear such close resemblances that it is often practically impossible to distinguish the one from the other. The arguments for and against the acceptance of eoliths as a genuine industry were given. The case is different with the engravings and frescoes on certain cavern walls of France, Spain, and Italy. These remarkable manifestations of art are accepted as genuine and as belonging to the closing epochs of the paleolithic period. Dr MacCurdy's address appears in *Science* (January 25, 1907) and will be published also in the *Proceedings* of the American Association for the Advancement of Science.

The program was arranged so as to group related subjects in a single session. One session, for example, included only papers on folk-lore, the President of the Folk-Lore Society presiding. At another papers of interest to students of economic and social science were read, the members of Section I being present and taking part. The Saturday afternoon program was devoted to the reports of standing committees and was of unusual interest to professional anthropologists.

Brief abstracts of the papers read are given in so far as material at the disposal of the Secretary will permit.

Dr C. Hart Merriam read three papers: "Totemism in California"; "The Yummĕ or Mourning Ceremony of the Mé-wuk"; and "Mé-wuk Myths." That totemism exists in California seems to have escaped the notice of ethnologists. It is in reality quite general. Totems are chiefly animal; they are rarely natural objects. Among certain tribes the totem governs marriage. In the northern division of the Mé-wuk it has a marked influence over the individual. The means by which the individual is led to recognize his totem were given in detail. Dr Merriam described under three heads the annual mourning ceremony of the Mé-wuk which he saw on October 10–11, 1906, illustrating by means of diagrams the round house in which the ceremony occurred. The last paper by Dr Merriam was a description of certain myths of the Mé-wuk Indians in which the coyote, bear, deer, lizard, mouse, condor, turkey-buzzard, robin, sand-hill crane, and other animals played a prominent part.

Dr Clark Wissler presented some "Notes on the Blackfoot

Myths." The myths of the Blackfeet are classified under the following heads: 1, Old Man Series; 2, Culture Hero; 3, Ritualistic Origin Myths; 4, Moral and Entertainment Tales. A comparison of the myths of these groups with the published mythologies of the Arapaho and Crows indicates a very close relation between the mythologies of the Arapaho and the Blackfeet. Of eighteen myths in the Old Man Series, eleven have direct parallels among the Arapaho and five among the Crows. Of twenty-seven Moral and Entertainment Tales, ten have direct parallels among the Arapaho and two among the Crows. Of fourteen Culture Hero Tales, four have direct parallels among the Arapaho. Thus, out of fifty-nine tales, twenty-four were directly parallel to Arapaho and seven to Crow tales. All the Ritualistic Origin Myths seem to be peculiar to the Blackfeet, and may be regarded as their own contribution to their mythology.

Mr Edward Sapir's "Notes on the Takelma Indians of Southwestern Oregon" are to be published in the *American Anthropologist*; while Mr Frank G. Speck's "Notes on Chickasaw Ethnology" are to appear in the *Journal of American Folk-Lore*. Mr Speck read a second paper entitled "Outlines of Culture in the Southeastern States," which also will appear in the *American Anthropologist*.

In her "Report on the Book on Maryland Folk-lore," Miss Anne Weston Whitney gave extracts from the material that is to form a forthcoming volume of *Memoirs* of the American Folk-Lore Society, the compilation of which has been assigned to various members of the Baltimore Branch. In Maryland folk-lore that of the negro predominates — witchcraft, death, hoodoo, conjuring, spells, etc., and the beliefs connected therewith. Comparison was made between negro folk-lore of Maryland and that of negroes elsewhere, as Jamaica and Africa.

Mr Stansbury Hagar's paper on "Cherokee Star Lore" is to be printed in the *American Anthropologist*.

"Philippine Märchen" was the topic chosen by Mr W. W. Newell, who spoke of an interesting collection of material that came to him from various sources in the Philippines. Though interesting, the derivation is largely European, especially Spanish.

"Recent Activity in Folk-lore in Missouri" was one of the themes discussed by Dr W J McGee. He said that a branch of the American Folk-Lore Society had just been organized in Missouri, largely at the instance of Dr A. L. Kroeber and through the energy of Professor H. M. Belden of the University of Missouri. The members and officers are drawn from different sections of the state, especially Columbia, Saint Louis, and Kansas City; the headquarters will be in Columbia, at the State University. It is the purpose of the organization to record existing traces of aboriginal lore in conjunction with the English, German, French, and Spanish folk-lore, which are interestingly combined in the remarkably composite population of the state.

In "Notes on Puebloan House Construction," by Mr Frederick S. Dellenbaugh, the query was made as to how far house construction alone could be depended on in tribal or race qualification. By itself the house frequently gave small indication of culture or race affiliation. The Icelander, of purely European ancestry, exhibited in his houses none of the architectural skill of his race. Conditions were against it. A turf or peat house was the easiest thing for him to build. The Iroquois made a flimsy bark house, yet ranked high in culture — conditions favored bark construction. In the Southwest conditions forced other, more permanent forms, for all peoples. There gypsiferous clays and stones slabs were at hand everywhere; bark was scarce. Different people, therefore, may build in the same way, while similar people may build in different ways. Without other evidence, house construction is an uncertain guide. Sites, too, were chosen for physiographic reasons, and site cannot be used as a gauge for race or tribe. Because houses and villages were built in cliffs, we cannot deduce a race of cliff-dwellers, any more than we can deduce a particular race of forest-dwellers because we find houses in the woods. House construction and house sites in themselves indicate no racial differences, or even cultural differences. An otherwise advanced tribe is sometimes prevented from constructing permanent houses by superstition, as the Navaho, who would not live in a house where a death has occurred. The Colorado river seems to be a line of demarkation between villages of the terraced many-roomed village and the

one-story few-roomed type. Here is perhaps a suggestion that the Apache and Ute entered the country from the north, driving the sedentary groups before them. The cañons of the Colorado then were utilized by the latter to hold the roving tribes at bay. Indications of fortifications are found at all fords and passes. Puebloan houses seem sometimes to have been built to imitate the site, as in the case of the Hopi village of Walpi where the breaks and angles of the cliffs on which it stands are reproduced in the walls till at a short distance it is difficult to distinguish the natural from the artificial. Puebloan construction was mainly of two materials: stone and clay. The stone was (a) *slabs*, (b) *blocks*. These were laid generally with clay mortar, but sometimes there was no mortar, and the stones were put together so neatly as to look like mosaic. Where mortar was used the wall was frequently plastered outside with clay and sometimes was whitewashed. The clay construction was of at least five kinds: (1) *Adobe bricks*, either round balls or the ordinary block form so well known; clay mortar was used. (2) *Cajon*, a form of ramming wet clay into frames. (3) *Single wattle*, plastered on one or on both sides. (4) *Double wattle*, with wet clay rammed between. (5) *Jacal*, a wall of upright stakes or rods, plastered with clay on one or both sides. This last construction was also in use east of the Mississippi. In some early Puebloan construction the jacal was used for upper stories, while the lower were of adobe bricks or of stone. Physiography controls house construction more than does race or culture. In addition there are the factors of daily habit and superstition. The Lapps, after centuries of close contact with a highly developed people, still dress in their primitive way and live in lodges covered with earth.

In "The Archeology of Manabi, Ecuador," and "Notes on the Andean Cultures," Professor Marshall H. Saville gave an interesting account of a successful expedition to those regions. He obtained an unrivaled collection of so-called stone seats from the environs of Monte Cristo in the coast region of Manabi. The entire absence of stone implements except hammer-stones was noted. Objects of copper also are rare. There are very few ruins in Ecuador, this being especially true of Manabi. In the interior or Andean region only two ruins are known. The present language

here is Quichua, but Inca influence is very slight on the archeology of the district. As one goes north the Inca influence becomes less and less apparent. Most of the antiquities found in the Andean district came from near Rio Bamba. Many fine examples of pottery, decorated by the so-called lost color process that characterizes a certain group of Chiriquian pottery as described by Holmes, were obtained at Rio Bamba. This ware is found also in northern Ecuador and southern Colombia. The valuable collections made by Professor Saville belong to Mr George G. Heye of New York, under whose patronage the expedition was conducted. The report on Manabi will be published privately very soon.

In "Notes on the Occurrence of the Mineral Utahlite as a Prehistoric Gem," Professor Henry Montgomery described the mineral as a hydrous phosphate of aluminum somewhat similar to turquoise and capable of being highly polished. Although rare, its occurrence has been noted in certain prehistoric ruins.

Mr Edgar L. Hewett's two papers were on "The Art of Glazing Among the Ancient Pueblos" and "The Relation of Pueblo Indians of the Rio Grande Valley to the Ancient Cliff-dwellers of the Adjacent Plateaus." As regards the art of glazing in pre-Columbian times, so many specimens have been found that they cannot be considered as intrusive. The ruins in question are certainly pre-Spanish. The glaze has been examined by Washington chemists and found to be saline; it may have originated accidentally about salt works. Immediate firing after applying a saturated solution would produce the glaze, which seems to have been used for decorative purposes solely. The Jemez plateau is the chief center for glazed ware. Mr Hewett's second paper will appear in a future issue of this journal.

"Recent Archeologic Work in Missouri" was the title of Dr W J McGee's second paper. During 1905 Mr D. I. Bushnell of Saint Louis, with two or three associates, explored certain mounds on the Illinois side of the Mississippi which yielded abundant relics described in a special publication; later in the season the same gentleman had a number of additional mounds, also in Illinois, excavated by Mr Gerard Fowke, who found moderately abundant relics not yet fully described. During the summer of 1906 Dr

C. A. Peterson, President of the Missouri Historical Society, with several members of the association (including the writer) made a number of archeologic reconnaissances in both Missouri and Illinois, in the course of which certain caves and mounds were examined — one of the trips being to an alleged aboriginal mound, larger than Cahokia or Etowah, near Mascoutah, Illinois, which was found to be a paha with a few small earthworks on its summit. The most noteworthy event of the year was the creation of the Saint Louis Society of the Archæological Institute of America, with Mr W. K. Bixby as President and Professor F. W. Shipley as Secretary, which resulted in the commencement of a systematic survey of the antiquities of the state. Under the auspices of this Society (including a subsidy from the Institute and a special contribution by President Bixby), Mr Gerard Fowke reconnoitered the lower valleys of the Gasconade and Osage with a portion of the valley of the Missouri in the central part of the state — the territory comprising what may be known as the Osage district; subsequently detailed surveys were made and more than sixty mounds were excavated. In general the mounds are poor in artifacts though rich in much-decomposed osseous remains; the most notable type of artifact is represented by vaults or chambers of well-laid stone, found in a number of mounds.

Professor George H. Perkins showed a number of specimens to illustrate his paper on "Pottery and Bone Objects Found in Vermont." Entire jars have very rarely been found in New England, and of the half dozen or so which are in existence the three largest were found in Vermont and are now in the museum of the University at Burlington. Photographs of the most recently found specimen were shown. This is ten inches high, hexagonal at rim, globular below, decorated in the usual manner of Vermont pottery by indented figures and lines over the entire upper portion. Its capacity is twelve quarts. Numerous fragments of highly decorated rims have also been found recently at what appears to have been a camp site, on Mallett's bay, the largest of the numerous bays of Lake Champlain. At this same locality, in a stiff clay which underlies the loose surface soil, many bone awls, scrapers, etc., have been found within the last two months. These objects are interesting in themselves, but they are especially so, as they are the first bone

objects found in Vermont, with the exception of one or two obtained some years ago at another locality. Marine shells and bits of coral have also been found with these bone objects.

In "Recent Geological Changes as Affecting Theories of Man's Development," Professor G. Frederick Wright characterized the Tertiary as a period of stability and the Quaternary as one of great and rapid changes.

"Harness Mound Explorations" was the subject discussed by Mr William C. Mills. The Harness Mound was opened in 1846 by Squier and Davis, and again in 1885 by Professor F. W. Putnam. In these earlier explorations fifty burials were uncovered. Mr Mills has recently found 133 additional burials. Cremation was quite generally practised. In cases where cremation took place at the grave no artifacts were found with the remains, but where cremation had taken place prior to the deposition of the remains, artifacts accompanied the latter. Mr Mills discovered a series of post-holes surrounding the burials. Long awls made of the leg bone of the deer were described, and differences noted between the bone implements from the Harness Mound and those found at Fort Ancient.

Mr Alanson Skinner gave the results of his "Recent Discoveries at a Prehistoric Indian Village Site at Mariner's Harbor, Staten Island." In the spring of 1903 recent railroad excavations at this place exposed a prehistoric site of the Hackensack Indians, a local branch of the Lenni-Lenape, or Delawares. Shell pits and burials were encountered, and up to the spring of 1906 these were opened whenever exposed and many skeletons were found. Pottery was abundant, and this, usually in Algonquian style, often showed Iroquoian influence. Grooved axes occurred, but no celts, and no implements were found with burials.

Saturday morning's program being of interest to students of social and economic science, members of Section I accepted an invitation to be present and take part. Professor Franz Boas opened the session with a paper on "Heredity in Head Form." Dr Robert Bean followed with "Some Racial Peculiarities of the Negro Brain," it being a résumé of his studies recently published in the *American Journal of Anatomy*.[1] In a scholarly paper on

[1] September 1, 1906, pp. 353–432.

"Brain and Education," Dr Thomas M. Balliet traced the development of the sensory, motor, and association centers.

"Selection and Elimination by Immigration" was discussed by Dr Maurice Fishberg. From available data, collected during the enrollment of soldiers for the Civil war, it appears that immigrants to the United States are, on the average, taller than the people in the countries whence they come. It was found that natives of England, Scotland, Ireland, Germany, France, etc., were on the average about one inch taller than the soldiers in armies of the countries of their birth. Not only were the immigrants from foreign countries superior to their compatriots at home, but native Americans who enrolled in other than their native states, were on the average taller than those who enrolled in their native states. Measurements taken by the author show that the Jewish immigrants to the United States are also taller than their co-religionists in eastern Europe. While there are no definite measurements, still it appears superficially that the Italian and Slavonic immigrants are also a selected class physically. This phenomenon is deserving of careful study by anthropologists. It has been attributed to "social selection" or selection by immigration, and it is said to be due to the fact that it is generally the stronger, the more energetic and adventurous, who ventures to leave the country of his birth, his friends, and relatives, and travel thousands of miles in search of a possible improvement of his condition. The delinquent and the defective lack the courage and perseverance necessary to undertake a long journey with small funds. Not all those who come to the United States remain here. More than twenty percent of all the immigrants return sooner or later to their native countries. The author observed that most of those who return to their homes are such individuals who, by reason of some physical or mental peculiarity, could not adapt themselves to the conditions in the United States. On the whole there appears to be going on a process of elimination of many of those immigrants who for various reasons are unable to gain a foothold in their new homes. Among those who are compelled to return to Europe, and there are said to be about 300,000 returning annually in the steerage, there are many who would be classed as undesirable immigrants by the immigra-

tian authorities but who in some manner passed the inspection at Ellis Island. Our social, political, and industrial conditions eliminated all these sooner or later.

"Certain Aspects of Human Heredity," the third paper to be presented by Dr W J McGee, closed the morning's program. Among the Ainu of Japan (of whom a group participated in the Louisiana Purchase Exposition of 1904), two fairly distinct ethnic types prevail, dividing — so far as known — on lines of sex; the males being of Caucasian aspect in color, pelage, features, stature, etc., while the females approach the Malayan type. Among the Cocopa Indians of the lower Colorado there is a notable variability in stature, ordinarily divided on sex lines, the males ranking among the tallest and the females among the shortest of the North American tribes; in this respect contrasting strongly, e. g., with the Pueblo peoples among whom both sexes are below, and the Seri Indians among whom both sexes are above the medium stature. These and other phenomena lead to a consideration of hereditary tendencies of which some incline either to "regression toward mediocrity," as shown by Galton, or "reversion to type," as shown by Mendel; while others appear to incline toward increasing and even cumulative variability in special characteristics.

At the afternoon session of Saturday, reports of certain standing committees were read. The report of Professor Franz Boas for the Committee on the Concordance of American Mythologies was adopted with the recommendation that the Committee be continued with power to publish.

Dr Charles Peabody reported for the Committee on American Archeological Nomenclature. The Committee was empowered to print Dr Peabody's report in full and distribute copies to members of the Association in order to form a basis for discussion and final action.

A similar disposition was made of Mr F. W. Hodge's report for the Committee on Nomenclature of Indian Linguistic Families North of Mexico. Mr Hodge also reported for the Committee on Book Reviews. The conditions in regard to book reviews are improving. The present policy is to ask the reviewer in advance of sending the book; but reviews are not always furnished promptly. It was sug-

gested by Professor Boas that a book be published by title immediately, with a note giving the scope of the work, a more extended review to follow if desirable. The report was adopted and the Committee continued.

Mr Edgar L. Hewett spoke for the Committee on the Preservation of American Antiquities. He reviewed the new law which seems to have been not only highly satisfactory but also administered to the letter. No permits under the law have been granted pending the adoption of uniform regulations, the making of which are entrusted to a committee. The President has already created the Petrified Forest National Park and also certain national monuments, such as Devil's Rock, El Morro, and Montezuma Castle. Mr Hewett reviewed the bill creating the Mesa Verde National Park. The report was adopted and the Committee continued with power to observe the operations of the law; to represent archeologists in the interpretation of the law; to place before the proper authorities information as to desirable sites to be preserved; to facilitate applications for permits to excavate, etc., and to act as a Joint Committee with the Committee from the Archæological Institute of America. A resolution was passed to the effect that no distinction should be made between foreign and domestic institutions relative to permits for excavations.

Monday's program opened with an account by Dr A. L. Kroeber of "Recent Results of Anthropologic Investigations by the University of California." The Department of Anthropology at the University of California is only six years old and owes much to the generosity of Mrs Phœbe Hearst. Its object is threefold: (1) The formation of collections; (2) publications, and (3) instruction. The Department has undertaken two surveys of California, one being anthropological and ethnological, and the other archeological. In discussing the latter reference was made to two papers recently published by Professors F. W. Putnam and J. C. Merriam in the *American Anthropologist*.[1] Dr Kroeber also referred to the discovery of a Quaternary cave in a new region and to the numerous shell-mounds on the Bay of San Francisco, probably one hundred

[1] Vol. 8, April-June, 1906, pp. 221-235.

in all. Only a few of these have been explored. In some instances the lowest shell deposits are below the level of the sea. The ethnological survey is to cover the whole state. Among the special researches may be mentioned Dr Dixon's work on a linguistic stock that is fast disappearing. In studying the three distinct culture regions special attention is given to environmental differences.

Additional evidence of anthropological activity in California came in the form of a paper by Miss Constance Goddard DuBois on "Sand-painting among the Luiseño and Diegueño Mission Indians of Southern California," which is to be published in bulletin form by the University of California. The sand-painting forms an integral and important part of some of the chief ceremonials of the religion of Chung-itch-nish, which religion was first described by Boscana in 1825, and has remained almost unknown since his day. It came to the mountain Indians of San Diego county from the coast Indians, and to them from the islands of the ocean. Since it was given later by the Luiseños to their neighbors the Diegueños, the religious ritual in both tribes is the same. The sand-painting is therefore found in both; but has been most fully described among the Luiseños. It was used in Mah-ne, the initiation ceremony for boys when the datura juice mixed with water was drunk from the sacred stone bowl; in Wu-kún-ish, the girls' *fiesta;* in Ah-nut, the ant-ordeal; and in Ú-nish Ma-tá-kish, the ceremony for burying the feather headdress, etc., belonging to a toloache initiate after his death. A central hole was dug, and the sand removed from it was used to make a heaped-up circle of a size varying in the different ceremonies. This was painted by sprinkling with powdered paints: the outer edge white; the middle red; the inner edge black; which circles signified the Milky Way, the Sky, and the Spirit of man, the Indian words all meaning "spirit"; the Milky Way being the spirit to which the spirits of men go at death. Three included rows of nine points each in succession make a geometrical figure colored in the same order, white red, and black; and the circle about the hole is similarly painted. Small heaps of sand in several divisions have each a special significance. The whole of the sand-painting represents the earth. The sky arching above it is supposed

to rest upon the circle of the Milky Way. There is a door to the north to allow of the escape of the spirit after death. The candidate in all the ceremonies mentioned except the last, knelt before the sand-painting facing the north with arms extended and a hand placed on the ground on either side of the painting, and spit into the central hole a lump of sage seed mixed with salt which signified the conclusion of a period of fasting. The hole was then filled by carefully sweeping the sand from the circumference toward it, thus obliterating the painting and ending the ceremony.

Mr Charles H. Hawes, a guest of the Association, presented some very interesting "Notes on Cretan Anthropology," accompanied with lantern illustrations. In 1903 Dr Duckworth of Cambridge University measured 85 Cretan crania belonging to the Bronze age, and 200 living subjects. In 1905 Mr Hawes added records of 11 ancient skulls and 1440 living Cretans, making on the latter about 29,000 measurements and observations. The data for prehishoric times give an average cranial index (for 62 ♂) of 73.4 and an estimated stature of 1625 mm., with a dolichocephalic percentage of 65.3 and a brachycephalic of only 8.5. From these and the archeological evidence of a non-Aryan culture, he concludes that prehistoric Crete, like neighboring lands, was peopled by a branch of the "Mediterranean race." But a brachycephalic minority existed even in the earliest period of the Bronze age, and Mr Hawes is inclined to attribute this to an infiltration, from the Anatolian highlands, of a people in the Neolithic stage, whether the so called "Hittites" or stragglers of the "Alpine race." The records on living Cretans yield an average cephalic index (for 1605 ♂) of 79.2 and stature of 1686 mm., with a dolichocephalic percentage of only 12 and a brachycephalic of 36.9. This broadening of the head and increase in stature he attributed to immigration. A marked increase of brachycephalism is noticeable toward the end of the Bronze age, and this tallies with the tradition of an invasion from the north of the Achæans and Dorians. Both tendencies owed something to the Venetian occupancy, but more to the Turkish of the last 250 years. Although the Cretan Mussulmans are mainly of native extraction and include only a small minority of Turkish half-breeds, yet their cephalic index (79.9) is a unit

higher than that of Christians (78.9) in the same provinces. The tendency, from Neolithic times, to increasing brachycephalism in Crete has a parallel in Italy and Greece, where the greater immigrations of northern peoples have produced the same phenomenon in a more marked degree.

Dr Berthold Laufer made "A Plea for the Study of the History of Medicine and the Natural Sciences." A Museum of the History of Medicine from prehistoric times to the present would be of special importance. Such a museum should include the medical lore of the Indians. Reference was made to the two professorships of the History of Medicine in the University of Berlin.

The paper by Dr Karl S. Kennard on "Ellis Island as a Field for Anthropological Study" dealt with the large quantity and variety of material presented at this station. The ease and rapidity with which it could be examined at this point would save delay and expense in accumulating data. More than four million aliens in the last six years had entered this port — comprising those nations which had been but scantily examined anthropologically — namely, the Magyars, people of the Balkan states, and Hebrews. Anomalies of head forms were witnessed among the southern Italians, who are generally believed to be a long-headed people. These unusual head forms resemble that of the Armenians. This was believed to be a racial trait — not an artificial product. The stature of Neapolitan women being greater than that of the men was noted, but could not be explained; also the lighter pigmentation of their eyes. Opportunities for study in folk-lore, linguistics, and elementary music of these people are here offered. Advantage should be taken to make use of all this material, for nowhere else in the world can it be effected with so little expense and such complete results.

Dr K. D. Jessen discussed "Geometrical Design in Primitive Decoration." Although Ernst Grosse, in his discussion of the so-called geometrical decorative designs found among primitive races, argues convincingly for the original imitative character of it, this view is not at all, it seems, universally accepted. Dr Jessen endeavored to show that the geometric design is, by origin, of an imitative character, naturalistic not imaginative, esthetically speak-

ing, representing objects or phenomena found in nature or made by culture. It is conventionalized just as the later botanical design becomes conventional, the imitative origin of which no one can deny. The facts as represented by ethnological observation corroborated with the facts concerning the beginnings of art in the child, are best explained by Grosse's theory. In fact, any other theory would involve a most extraordinary break in the evolution of the human mind and would have to be excluded, perhaps, logically, under the law of contradiction.

Miss H. Newell Wardle's communication was on a kindred topic, "Studies in the Life History of Primitive Art." The art of primitive man, at its inception, was bound by no laws, governed by naught save size and contour of the object whereon he wrought. It was realistic. With the invention of basketry, geometric figures were introduced. The discovery of pottery furnished a new field for the growth of the esthetic sense. The clay vessel inherited the geometric decoration from its predecessor, the basket, but ornamentation of pottery was by means of incising and painting, and these, more ancient than the textile arts, came unbiased to the clay of the new field. Realistic and geometric decoration upon pottery of necessity reacted upon each other, tending to produce angularities in the former, and scrolls in the latter. The predominance of either form in the art of a people depends not so much upon culture level as upon the peculiar genius of that people. Geometric designs degenerate in two ways: (1) by complication — the reduplication of parts and addition of apparently meaningless flourishes — and (2) by simplification to some striking characteristic — the law of essentials in primitive art. For primitive man, the world around was filled with sentient beings. Of these he made his gods. Their symbols were, of necessity, life-forms. The life-form passes into the geometrical, and this, with the growth of philosophic and religious thought, is reinterpreted or degenerates into meaningless ornament. A good example is the swastika. The origin, meaning, and decay of the symbol were fully discussed.

Professor William P. Blake described an "Aboriginal Racecourse." In the southern portion of Yavapai county, Arizona, at Peeples valley, not far from the ranch of Coles Bashford, there is a

remarkable paved way, race-course, or stadium of unknown but undoubtedly aboriginal origin. It is in the form of an ellipse, some hundreds of feet in major length, and is paved with rough blocks of granite of irregular form for the full breadth of the roadway, about a rod. This way is bordered on each side by large outlying bowlders of gray granite, now partially overgrown by live-oak trees. The largest of these bowlders would appear to have been convenient for spectators, but were probably placed by Nature along the borders of the two adjoining and nearly parallel water-courses, now dry. It may be supposed that this paved way was designed and used for foot-races. It appears to be worthy of measurement and a map.

The closing number on the program was a communication from Professor E. H. Barbour on "The Nebraska Loess Man," presented by Professor Henry B. Ward. The discovery in question was made by Mr Robert F. Gilder, in October, 1906, on Long's hill, facing the Missouri river, ten miles north of Omaha. Long's hill stands 200 feet above the river. It is a hill of erosion and no discoverable land slip has complicated its simple geology. On its summit is Gilder's mound, in the superficial layer of which were found mound-builder remains, and in the deep layer eight skulls and many bones of a still more primitive type. According to Professor Barbour, there is evidence of burial in case of the upper bone layer, but none in case of the lower. The bones found in the undisturbed loess, it is said, doubtless antedate the hill itself. The loess in question rests on Kansan drift, and though as young as the later Wisconsin sheet, or younger, it is nevertheless old. A more extended account may be found in *Science* for January 18, 1907, and in the *Nebraska Geological Survey*, vol. II, part 5.

Papers were read by title as follows:

Dr Nicolas León: Foc-Lor Mexicano.

Mrs R. F. Herrick: (*a*) The Volcano of Bell Springs. (*b*) On the Preparation of Bone for Certain Implements.

Mr William Nelson: (*a*) Witchcraft in Northern New Jersey in the Nineteenth Century. (*b*) The Use of Water Witches in Railroad Building.

Dr A. M. Tozzer: Maya Religion.



Dr George F. Kunz: On the Aboriginal Use of Turquoise on the American Continent.

Dr Ales Hrdlicka: Racial Characteristics of the Humerus.

Major C. E. Woodruff: The Disappearance of Blond Types from the American Population.

Mr James Mooney: The Decrease of the Indian Population.

Rev. S. P. Verner: (*a*) Iron and Copper Metallurgy in the Kasai. (*b*) The Pygmies and the Anthropoid Apes. (*c*) Phallic Influence in Bantu Art and Mythology.

Col. Paul Edmond Beckwith: The French-Egyptian Medal in Commemoration of the Savants who accompanied General Bonaparte into Egypt.

Dr Alton H. Thompson: The Ethnology of the Teeth.

Dr Cyrus Thomas: Some Suggestions in Regard to Primary Indian Migrations in North America.

Dr Samuel S. Laws: (*a*) The Physiology of Second Sight. (*b*) A main Factor in remedying Deafness. (*c*) The True Object of Vision.

YALE UNIVERSITY MUSEUM,
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BOOK REVIEWS

Sulla Matematica degli Antichi Cinesi, Nota di GIOVANNI VACCA. (*Estratto del Fascicolo di Ottobre, Novembre e Dicembre 1905 del Bollettino di bibliografia e storia delle scienze matematiche.*) Torino.

That the Chinese possess a particular genius for mathematics is well known, and owing chiefly to the labors of Alexander Wylie we are able to outline clearly their proficiencies in this science, though for a detailed knowledge of the subject far more is left to be done.

The object of the present paper is a new discussion by a mathematician of the ancient Chinese Pythagorean proposition which, although its assignment to the date 1100 B.C. cannot wholly withstand literary criticism, was doubtless known in China in times anterior to Pythagoras, and, as the demonstration of Dr Vacca plainly shows, must be quite independent of Greek science. The ancient document in which this, with many other mathematical principles, is laid down for the first time, has been translated before by Gaubil, Biot, and Wylie. Dr Vacca communicates a new revised translation furnished by Professor C. Puini, of Florence, from which it appears that the Chinese theorem differs fundamentally from that of Pythagoras by being based on the construction of a right angle and on arithmetical computations inferred from it. This seems thoroughly compatible with the drift of Chinese mathematical genius, whose forte was always arithmetic and algebra, but not geometry, and renders it unnecessary, as Dr Vacca is inclined to propose, to call attention to the development of the application of arithmetical calculations to geometry and astronomy among the ancient Babylonians. Sinological readers may here be referred to the cyclopedia *T'u shu chi ch'êng* (sec. 3, bk. 103, 4, p. 22b), in which the geometrical construction of the right-angled triangle with the sides 3, 4, and 5, and their corresponding quadrates, is given in an excellent figure.

Dr Vacca then refutes the sweeping statements of some European mathematicians who either refuse to recognize the existence of a mathematical science in China or see in it only the constitution of a mere rude mass of empirical rules. In his opinion, we should say that mathematics takes its origin whenever some relations of mutual dependence of propositions and rules appear, and when such relations begin to be admired. The existence of the esthetic seems to him to be fundamental in mathe-

matics, not only for the purpose of guiding us in the earliest beginnings of development, but also for placing in a right light the complicated edifice which we now possess. From the fact that the most lively admiration is expressed for the discovery of the ancient Chinese Pythagorean theorem, he thinks he is justified in inferring that it represents a real mathematical demonstration, and it may be granted that he is apparently right in this conclusion.

It is to be hoped that Dr Vacca will continue his meritorious studies in this wofully neglected field and devote some of his energy, for example, to the Chinese problems of algebraic equations, which, more than anything else, must elicit our undivided admiration.

B. LAUFER.

Skalpieren und ähnliche Kriegsgebräuche in Amerika. Inaugural Dissertation zur Erlangung der Doktorwürde der Philosophischen Fakultät der Universität Leipzig, vorgelegt von GEORG FRIEDERICI. Braunschweig: Friedrich Vieweg und Sohn, 1906. 8°, 172 pp., map. (5 Marks.)

The author of this paper on scalping and cognate war customs in America, Captain Georg Friederici, of the German army and former legation attaché in Washington, is already known to American scholars for his Indian studies. The present paper, by which he obtained his doctor's degree at Leipzig, is one of the most important ethnologic monographs which have appeared in a long time. The investigation covers the whole American continent, but naturally concerns most the United States and Canada.

The author deals first with the origin of the word *scalp*, which he derives from an old Low German word signifying shell or sheath, and shows how this convenient monosyllable superseded the more cumbersome descriptive terms used by early Spanish, French, and English explorers. The custom itself he considers essentially American, very few references to it occurring in any other part of the world since the time of Herodotus, who mentions it among the ancient Skythians. The first definite mention of the custom in America is by Cartier, who, while in the vicinity of the present Montreal in 1535, was shown five scalps dried and stretched on hoops, which the Indians had taken from slain enemies toward the south. Farther down the river in 1603 Champlain witnessed a dance in which fresh scalps were carried by the women as they danced. De Soto, Laudonnière, and Captain John Smith found the custom among the southern tribes.

Contrary to the general supposition, our author shows conclusively

that the practice of scalping, in the early exploration period, was not universal in North America, but was confined to an area stretching from the mouth of the St Lawrence to the Gulf and the lower Mississippi, nearly equivalent to the territory held by the Iroquoian and Muskhogean tribes and their nearest neighbors. It was absent from New England and along the coast almost to Delaware bay, and was unknown throughout the whole interior and the Plains area, on the Pacific coast, in the Canadian northwest and in the Arctic region, as well as everywhere south of the United States, with the exception of an area in the Chaco country far down in South America. Throughout both Americas the ordinary trophy was the head, excepting in the frozen extremes of the Arctic regions and Patagonia, where trophies of any kind were seldom taken, a fact that Friederici ascribes to the inhospitable nature of the environment, compelling the savage to concentrate all his attention upon the urgent necessities of existence. Conversely, the most elaborate development of the trophy cult was found in the warmer tropic regions where conditions were easiest and leisure most abundant.

The rapid spread of the scalping practice over the continent until it had completely superseded the earlier head-hunting, he ascribes to the changed conditions brought about by the introduction of European weapons and to the encouragement given by the colonial governments in offering premiums for scalps. As paid and equipped allies of French or English the Indian warriors organized their raids on a larger scale and extended their incursions to more remote points. The head being too unwieldy to carry any great distance, in addition to the burden of gun and ammunition, the more convenient scalp was evidence of victory and check for payment. In the Pequot war of 1636–37 the Puritans paid for Indian heads. Forty years later and thereafter they paid for scalps on a steadily rising market until in 1723 good Chaplain Frye eked out his ministerial salary by killing Indians at one hundred pounds per scalp. The French colonies of Canada and Louisiana were seldom able to pay more than about ten dollars per scalp, which, however, they did with cheerful good will. In Pennsylvania in 1764 the legal price was $130 for a man's scalp and $50 for that of a woman. In the Revolution the price ran up to £75 for every warrior's scalp. In 1835–1845 the north Mexican states paid organized companies of American scalp hunters $100, $50, and $25 respectively for scalps of Indian men, women, and children. In 1849 the price was doubled for men, women, and boys under fourteen. Some fifteen years later the territory of Idaho authorized the organization of a volunteer company to kill Indians at — "for

every scalp of a buck, $100; for every woman, $50; and for everything in the shape of an Indian under ten years, $25; every scalp to have the scalplock and every man to declare on oath that said scalp had been taken by the company." With such encouragement the rapid spread of the custom is easily understood. As to the whites, it may be briefly stated that the borderman was a scalp-hunter as long as a border line existed. Under the Dutch government of New York prices were paid for Indian hands, a custom which Friederici regards as directly introduced from West Africa with negro slavery.

The general custom of shaving the head, excepting a central ridge or lock, among the eastern tribes, he regards as protective in its purpose, to prevent seizure by the enemy, while on the other hand the equally universal long side plaits and pieced-out back hair of the Plains were made possible by the fact that the prairie warrior fought on horseback and seldom came to close quarters. He is undoubtedly correct in regarding the "coup" as of earlier and greater importance among the Plains Indians than the scalp.

In his chapter on cognate customs he notes all the various forms of mutilation, the necklaces of human teeth, the pyramids of human skulls, the dried and shriveled heads, the drinking cups fashioned from human skulls, the flutes from human bones, the statues and drums of entire human skins found in Mexico, Yucatan, the Amazon region, and the Quichua domain. None of these customs, in his opinion, has origin in ancestor worship, as claimed by some writers, but all are based on the simpler motive of the trophy, and he enters a sensible protest against the tendency "to reach out for the remote and abnormal" when a more evident explanation is close at hand. The preparation of the scalp trophy, the dance and other related ceremonies, and the taboos and religious ideas connected with it, are all noted. The extended bibliography is a virtual index to American ethnology, and the accompanying valuable map makes the general statement clear at a glance.

The Susquehannocks and Minquas (p. 18) are identical, the Massawomekes are the Iroquois, and the Nottoways were a cognate tribe of southern Virginia. The reviewer must adhere to his former statement, noted on page 23, that in 1833 and later the Osages generally beheaded without scalping. So recently as 1863, according to the official Indian report for that year, they killed, beheaded, and scalped an entire party of seventeen or more unfortunate Confederate officers who fell into their hands — evidence that so late as the Civil war the one custom still held equal place with the other. JAMES MOONEY.

Der Volksmund: Alte und neue Beiträge zur Volksforschung, Herausgegeben von DR. FRIEDRICH S. KRAUSS. Leipzig: Deutsche Verlagsactien-gesellschaft, 1906. [Band I, 12°, xxiii, 160 pp.] (1 Mark per volume.)

Volume 1: *Austrian Folksongs, with music, collected by* F. TSCHISCHKA and J. M. SCHOTTKY, Second revised and enlarged edition.

Volume 2: *German Jests of the 16th Century, edited and adapted by* E. K. BLÜMML and JOSEF LATZENHOFER. Part 1 — *The Road Shorteners, of Martin Montanus (1557).*

Volume 5: *The same,* Part 2 — *Jakob Frey's Garden Party (1556).*

Volume 3: *Aussee and Ischl Schnaderhüpfel, with music, from the Bavarian-Austrian border dialect, collected and edited by* E. K. BLÜMML and FRIEDRICH S. KRAUSS.

Volume 4: *Austrian Folk Tales, by* FRANZ ZISKA, *with appendix of Child Songs and Child Rhymes from Lower Austria, newly edited, with Introduction by* E. K. BLÜMML.

Volumes 7 and 8 in one. *Gipsy Humor; 250 Jests, Anecdotes, and Tales.* By DR. FRIEDRICH S. KRAUSS.

The first of these booklets contains a number of Austrian folk-songs gathered, mainly by Johann Schottky, the great Silesian antiquarian and folklorist, in the mountain region about Vienna some ninety years ago. They include cradle songs, child songs, Christmas songs, comic, love, and hunting songs, together with a large and characteristic collection of "*Schnatterhüpfeln,*" a peculiar sort of four-line verse dance songs, by some supposed to be a fragmentary survival of ancient dance rituals. The musical notation accompanies many of the songs, all of which are in the local dialect, of which a sufficient glossary is given, together with a chapter on its grammatic peculiarities. Many of the verses are gems of their kind, and it is much to be regretted that their beauty is hidden under a dialect disguise, but, unfortunately, the people who make folk songs do not speak in literary forms.

Numbers 2 and 5 consist of comic collections from sixteenth century writers. The first contains the *Wegkürzer* ("road shorteners") of Martin Montanus (*ca.* 1557), a series of short stories such as two young men might tell to relieve the tedium of a day's walk, all intended to amuse and usually more or less coarse, according to the spirit of the times. Number 5, the "*Gartengesellschaft*" of Jakob Frey (1556), is of the same order, but with slightly more of literary flavor and with a distinct grudge against the clergy. Number 3 is a more recent collection of "*Schnatterhüpfeln*" (the word has several dialectic forms) from the southern Bavarian border, all having the tailor as the unfortunate hero of the adventure. The music of the songs is given, and there is an introductory

treatise on the tailor in folklore, particularly in connection with the goat. Number 4 is a collection of dialect folktales from the Schneeberg on the eastern Bavarian border, first published by Franz Ziska (alias Tschischka) at Vienna in 1822, together with a number of children's songs and song games, household prayers, holiday greetings, etc., gathered by Johann Wurth, the whole edited, with introduction and glossary, by E. K. Blümml.

Numbers 7 and 8, in one volume, contain some 250 anecdotes and folktales of Gipsy and Slavonian origin, keenly illustrative of the careless improvidence and childlike simplicity of the Austrian Gipsy, so much resembling that of our Indians. Much of the material was gathered by the doctor himself in Gipsy tents.

It is not too much to say that in this "Volksmund" series of Dr Krauss we have one of the most important contributions yet made to our knowledge of South German dialect and folklore.

JAMES MOONEY.

Eduard Kulke's erzählende Schriften. Herausgegeben von DR. FRIEDRICH S. KRAUSS. Band III: *Schnurrige Käuze* [Droll Fellows]. Leipzig: Deutsche Verlagsactiengesellschaft, 1906. 8°, 206 pp.

This third volume of the collected works of Eduard Kulke — the distinguished Moravian ghetto writer, composer, and philosopher — edited by Dr Krauss, consists chiefly of short tales and catchy anecdotes, this time not in dialect, but in intelligible literary German. Many of them deal with Hebrew subjects and take incidental note of interesting Jewish customs. The complete series is expected to make twelve small volumes, for sale at two or three marks each. JAMES MOONEY.

Anthropophyteia: Jahrbücher für Folkloristiche Erhebungen und Forschungen zur Entwicklunggeschichte der geschlechtlichen Moral. Von Dr FRIEDRICH S. KRAUSS. III Band. Leipzig: Deutsche Verlagsactiengesellschaft, 1906. 4°, vi, 449 pp., plates. (Privately printed in numbered copies.)

The third volume of *Anthropophyteia* deals chiefly with Elsass, upper Austria, Slavonia, Servia, and the Magyar country. It contains chapters on popular customs and beliefs in connection with puberty, pregnancy, and childbirth, love charms, phallic survivals, erotic rhymes, and proverbs, and other things relating to sex cult as found either in primitive society or in a degenerate civilization. The illustrative selections are given in Magyar, Servian, and German, with accompanying glossaries. Among the collaborators are a number of prominent physicians and men of science of Germany, Austria, Italy, and the United States.

JAMES MOONEY.

Folk-Lore of Women as Illustrated by Legendary and Traditionary Tales, Folk-rhymes, Proverbial Sayings, Superstitions, etc. By T. F. THISTLETON-DYER. Chicago: A. C. McClurg & Co.; London: Elliot Stock, 1906. 12°, 254 pp.

We have here, selected for us out of a million folk-sayings — coarse and fine, serious and jocular — the best, as many as the interested non-professional reader needs or would care to digest. Mr Thistleton-Dyer is doubtless the best of our English lorists to guide us in the selection. So the reader picks up the book entirely prejudiced in its favor. When Mr Tylor was in our country, he said in his lecture before the Anthropological Society of Washington, that he had come to America to study old England. In reading *Folk-Lore of Women* one is impressed here and there with the suspicion that some of its proverbs are to be found in their fuller expression here in America. For example:

> Beauty is but skin thick, and so doth fall
> Short of these statues made of wood or stone.

We say:

> Beauty is but skin deep,
> Ugly's to the bone;
> Beauty soon will fade away
> While Ugly holds her own.

And there are others that have a more simple, folk-like, unliterary air about them. The author's title means folk-lore about women, and not folk-lore composed by women. Some of the quotations would better be labeled "mean things about women, written by another sex." Though the following is by Mrs Browning:

> A worthless woman! mere cold clay,
> As false things are, [M!] but so fair,
> She takes the breath of men away,
> Who gaze upon her unaware.

O. T. MASON.

Morphology and Anthropology, A Handbook for Students. By W. L. H. DUCKWORTH. Cambridge: The University Press; New York: The Macmillan Company, 1904. 8°, xxviii, 564 pp. ($4.50.)

This is a useful and much-needed book. It is not, to be sure, a book for reading, for it is too full of detailed information and too concise in style to be read with comfort; but it is exactly what it claims to be — a handbook for students. It will likewise be useful as a reference book. It has its limitations also in the subject matter; it does not attempt to

cover all the problems of physical anthropology, but confines itself strictly to the field of morphology. It seeks to present in an objective form the evidence on two great questions: as to the place occupied by man in the zoological series, and as to the relative positions in the evolutionary scale of the different types of man. The bulk of the book is occupied with the detailed evidence; the conclusions are only briefly stated, and in view of the critical attitude of the author toward the evidence, his conclusions have the appearance of being unusually well supported by his facts. The statements are based in large measure on a first-hand study of specimens. There are more than 300 drawings, most of them original. As to the accuracy of the data given, the reviewer will not attempt to express a judgment, as such a judgment would need to be founded on a much more thorough verification of the statements than the reviewer has been able to undertake. He has observed one slip which should be noted. On page 91 the statement is made that Sherrington and Grünbaum found the motor area of the cortex of the gorilla to lie exclusively on the *posterior* side of the central or Rolandic fissure, whereas the fact is of course that they found it to lie exclusively on the anterior side of the fissure (and in the fissure itself). The reader of statistical proclivities will remark the absence of systematic indications of the variability of the measurements from which the averages are obtained, and will be inclined in consequence to doubt whether the *typical* measurements and drawings given are reliable. It should be said, however, that the author treats in the main only of relatively large variations; such minor differences as obtain among the components of the populations of Europe and Asia are scarcely considered.

The work is divided into four sections: on comparative anatomy, human embryology, anatomical variation, and paleontology. The first two of these are concerned with the problem of the relationships of the human species to the order of Primates. The treatment of comparative anatomy comprises a brief account of the Mammalia in general, and of the principles of their classification, followed by a more detailed study of the Primates and especially of Gorilla, and by a comparative account of the crania of the Simiidæ. A chapter of thirty pages is devoted to the dental system of the Primates; importance is assigned to the study of the teeth, both because of their prominence in fossil remains and because of the direct morphological inferences that can be drawn from a comparative examination of them. The principal conclusions which are drawn from comparative anatomy are that the most generalized form of extant primate is seen in the Lemuroidea, that man is related most closely to

the Simiidæ, but that the modern apes are highly specialized forms, being in many respects more specialized than man himself.

The section on embryology, which is based on the principle of recapitulation, seeks "to ascertain something of Man's ancestral history, that is, of the path of evolution traced by Man." A number of characters are adduced in which the human fetus resembles the adult or sometimes the fetal condition of the Primates, especially of the higher apes. However, "no special Primate form or forms are indicated as definitely ancestral to Man. But this need cause but little surprise when it is considered that the modern Primates have all themselves undergone modifications in the course of their descent from the common ancestral forms . . ." (p. 171). "The flatness of the nose, the imperfect power of opposition of the pollex (shown by the mode of grasp in the new-born infant), the straighter lumbar column, the flattened sacrum, the imperfectly extensible hip and knee, the proportionately long upper limb, the incurved feet (and, in the female, the straight vagina), may be mentioned as features of this kind, which definitely support the theory of an ancestry inclusive of ape-like forms. Further, though the evidence is not yet so complete as could be wished, there is no reasonable doubt but that the associations are with the Simiidæ rather than with their lower congeners among the Primates, due account being taken of resemblances first to one, then to another of the lowlier forms in that Order. Among the Simiidæ, it is difficult to choose between the three larger forms, but, again upon the whole, the associations with the Chimpanzee are maintained longer than with the remaining examples. And upon these considerations the view is based, that of living animals this (the Chimpanzee) represents, not necessarily very closely, but on the whole more nearly than any other, that comparatively late human ancestor, which were it still in existence in an unmodified form, we should be induced to associate morphologically with the Family Simiidæ, while excluding it from the Family Hominidæ" (pp. 188, 190). It is still more difficult, in fact impossible in the present stage of knowledge, to select from among the lower apes any one form as the closest representative of the stage of human descent next back of the Simiidæ.

In the section devoted to the subject of anatomical variations, a short account is first given of atavistic variations which are of importance as indicating the line of human ancestry; but the bulk of the section, which is the longest of all, constituting about half of the book, is occupied with a detailed comparison of the morphological types of man, "with the object of ascertaining whether simian characters are present in any particu-

lar race more numerously or in a higher degree than another." The various craniometric and osteometric measurements (or a considerable selection of them) are described and pictured, the indices are defined, and some results, tending to show the range of variation in human groups and to permit comparison with other animals, are cited. The soft tissues, especially the nervous system, are also compared. In the comparison of the cerebrum in different races, the author gives particular attention to the fissuration, specially to the frequency of occurrence of the sulcus lunatus. He sums up the conclusions from the comparative morphology of man in a chapter of 44 pages on "The Morphological Varieties of the Hominidæ." The basis of his classification is the three cranial characters of breadth index, degree of prognathism, and cranial capacity; and the results are pictured in an interesting way by diagrams which are in effect projections of a solid model, the three dimensions of which represent the numerical values, in the various groups, of the three characters mentioned. This manner of combining the data leads to the distinction, in addition to an undifferentiated form of cranium, which the author is inclined to regard as the most primitive type, of seven rather markedly different types, corresponding geographically to the Australian, African Negro, Andamanese, Eurasiatic (including most of the inhabitants of Europe, Asia, and America, as well as of northern Africa and apparently also the Malays), Polynesian, Greenlandic, and South African. These types are illustrated by drawings of the upper, lateral, and anterior aspects of the skull of each. "Finally we may remark that of the seven specialized forms distinguished in the foregoing list, the first presents the greatest number of simian characteristics combined in one type, and the same remark applies to other morphological characteristics associated with this form of skull. The second group comes next in order, after which the evidence upon which the groups can be coördinated becomes vague and indefinite, so that their morphology as at present known will not alone suffice to reduce all the known varieties of Man to an order representing their respective grades of evolution" (pp. 462, 463). Further study of the pigmy groups is, the author thinks, specially necessary before the true order of the types can be determined. As an appendix to this chapter an account of the morphology of the pigmy races is given.

The last section of the book is devoted to a survey of the fossil remains bearing on the ancestry of Man. The remains of lower Primates are briefly described, but most attention is paid to *Pithecanthropus erectus* and to the Neanderthal, Spy, and Krapina remains. Some account is given of the conflicting views that have been held regarding the signifi-

cance of these remains; the evidence is carefully sifted, and the result is reached that "in *Pithecanthropus erectus* we possess the nearest likeness yet found of the human ancestor, at a stage immediately antecedent to the definitely human phase, and yet at the same time in advance of the simian stage" (p. 520), and that *Homo primigenius* (or *neanderthalensis*) is a distinct species, occupying a lower position than any recent race of Man, though clearly higher than the apes or than *Pithecanthropus erectus*.

R. S. WOODWORTH.

Mental Development in the Child and the Race. Methods and Processes. By JAMES MARK BALDWIN. *Third Edition, Revised (Seventh Printing).* New York: The Macmillan Co., 1906. 12°, xviii, 477 pp., 10 tables, 17 figs.

Social and Ethical Interpretations in Mental Development. A Study in Social Psychology. By JAMES MARK BALDWIN. *Fourth Edition.* New York: The Macmillan Co., 1906. 8°, 606 pp.

These two companion volumes are certainly notable books, and it should be noted that the latter was crowned with the gold medal of the Royal Academy of Denmark. While they cannot appear among the new books, and while there is relatively little in these later editions not contained in the first, it may not be amiss to give brief consideration to such large aspects of the whole work as relate to anthropological interests. In his *Mental Development* the author has made a strong case in justfication of the genetic method for psychological studies, a method which has had a great deal to do with the development of the biological and social sciences. In fact, almost every phase of research has been quickened by the genetic conception. On the other hand, the most notable American anthropologists have repudiated genetic conceptions, in fact almost tabooed them, and set up a systemic ideal with a classification based on the geographical distribution of habit characteristics. This virtually hands over to the psychologists one of the most important and dominant academic problems known to men: viz, the history of the human mind.

In his *Mental Development* the author states his position most emphatically as the "relations of individual development to race development are so intimate—the two are so identical, in fact—that no topic in the one can be treated with great clearness without assuming results in the other." However, the author means by this that the ontogenesis and the phylogenesis of consciousness are quite identical. Thus with one sweep he draws in the psychologist, the biologist, the anthropologist, the sociologist, and the religionist. This is the significance of race in his title.

The consequence of this is necessity for the study of the child by the experimental conventional methods, outlined in chapter II. Then the serious problem of the author begins. In four parts he considers in order: (1) Experimental Foundations; (2) Biological Genesis; (3) Psychological Genesis, and (4) General Synthesis. In this long discussion the author is grappling with the problem of the evolution of mind as revealed in the embryology of mind. This book was written ten or more years ago, when the recapitulation theory was in the fore and stimulated research in embryology and genetic psychology. Now, there are evidences of a reaction, for some biologists seem to take the view that the adult is the real important object from which the point of departure is to be taken.

In one part of this long argument there is an interesting discussion of right-handedness, indicating that it is a deep seated human characteristic. In the appendix is a study of Mallery's paper on *Sign Language*, showing the predominance of right-handedness in gesture speech. (It does not seem, however, that a functional relation between speech and the hand is necessarily implied by these facts.) From this the author passes easily to a consideration of handwriting.

The second volume is a continuation of the subject from the point of view of social psychology, the plan being "to inquire to what extent the principles of the development of the individual mind apply also to the evolution of society." The conception of the author is that if we once know the principles which the individual shows in his mental life, we can by elimination decide what principles are truly social. First, the person as a social element is considered as imitative, possessed of a certain equipment and acting upon certain sanctions. This section is of some interest to ethnologists, since it is clearly shown that invention is a mental characteristic of the child even more than of the man, and, further, that imitation alone will not explain the social status. Language, play, and art are treated as social aids to invention. The discussion of the genius as the great inventor and the consequent social shifting toward new nuclei caused by their inventions is very suggestive, because the ethnologist is constantly meeting with cultural differences due to the genius of some one or two individuals. The person's equipment is considered as largely made up of instinct and feeling. This is one commendable feature of the book, for the present day academic scientists are so afraid of anything resembling emotion that they often even refuse to admit it as an effective individual and social force. In short, nothing is admitted into the academic scientific fold until it is squeezed into dry intellectual pulp.

The next consideration is of sanctions. The personal sanctions are considered as a psychological and ethical problem. Then come up for review the social sanctions. The author claims that the opposition between the two is largely fictitious, because it can not be conceived that there are social sanctions that do not rest on personal ones for the very reason that there can be no society without persons. Yet the reality of opposition between the two sanctions is not denied, for the individual is often in revolt against the social order. Then the problem of the second book is raised: "What place in the social development, if any, has the opposition between the personal sanctions and the social sanctions?"

Thus we come to the person in action and to social organization. Throughout the book the biological analogy is ever brought to the test, and in this section is the culmination of the argument that "social organism" is a false conception because the phenomenon is psychological, or analogous to a growth of consciousness instead of analogous to the development of a biological organism.

It is a matter of regret that the author did not force home one point. After having, by long labor, arrived at the conclusion that the social is in reality a psychological affair and susceptible of being evolved from the individual consciousness, thus breaking the tie between the social and the biological, the ax could have been applied to those theories that seek to identify social and biological evolution, regarding the former as the final function of the latter.

The author's literary method is involved, and one can not quite escape the conviction that he is tedious; but he has certainly made a strong case for his thesis. CLARK WISSLER.

The Todas. By W. H. R. RIVERS. London: Macmillan & Co.; New York: The Macmillan Co., 1906. 8°, 755 pp.

This is a grand work, though nothing more perhaps than might have been expected by one acquainted with its author's previous labors in Torres strait. Full of meat from cover to cover, it yet exhibits a true scientific attitude in the care with which the proven or partially proven is distinguished from the uncertain and the unknown. In approaching this work Mr Rivers found himself confronted by a tribe that was no stranger to ethnologists — one, in fact, supposed to be known so well as hardly to require further investigation. The enormous advance our author has made upon that work, however, although he himself is always careful to give full credit to his predecessors, suggests what slender basis there may be for the statement sometimes made that such and such a field has been exhausted.

The interest attaching to the people under consideration has been due in the first place to their unique social customs, especially their pronounced and peculiar polyandry, amounting in some cases to group marriages between families, and secondly to the extent to which general theories of social evolution have been based on these. Mr Rivers is to be commended for the limited extent to which he has allowed himself to be prejudiced in advance in his study of the people in question and the fairness with which he presents facts that might be adduced in favor of this or that hypothesis.

At the present day the Todas number about 800 souls, divided in the proportion of about five to two between two endogamic sections called Tartharol and Teivaliol. Each of these in turn is subdivided into a number of clans owning separate villages but forced to marry outside. It is an interesting commentary on the fallacy of many popular sociological arguments that here among a polyandrous people, where if anywhere paternity is uncertain, descent is yet paternal. It is true the paternity is largely, if not usually, fictitious, being determined not by known fatherhood but by the ceremony of giving a bow and arrow to the mother by one among the possible fathers of the child, but this hardly mitigates the significance of the main fact that descent is reckoned through the males. Interesting to students of American Indian society will be the sections in which Mr Rivers deals with clan divisions, showing, as he does, by actual examples the progressive sundering of different sections of a clan from a position in which intermarriage is prohibited between them to one in which marriage is allowed. Scarcely, if at all, second in interest are the descriptions of the elaborate dairy rituals, about which the religious life of this peculiar people centers. In each of the two great divisions there are common and sacred herds of buffalo, but while the Teivaliol have sacred herds of but one kind, there are several distinct grades of herds and dairies among the Tartharol, varying in degree of sanctity and complication of ritual up to the crowning Ti dairies. The priests of these dairies are always drawn from the Teivaliol, or one special Tartharol clan called Melgarsol. The mythology behind this dairy ritual strikes one as decidedly meager in comparison, and neither profoundly philosophical nor elevated in tone, many of the leading gods being apparently deified men.

One is tempted to write much besides, but it is impossible to do more than to suggest a few of the interesting points brought out in this book. Mr Rivers' general conclusions, all the more important to us as founded on such a wealth of information, are these: He indicates a

strong probability that the Todas are an intrusive tribe which probably came into the Nilgari hills from the district of Malabar, on the west coast, though certain arguments may be adduced in favor of Mysore or Coorg. Secondly, he is of opinion that they represent a decline in culture and religion rather than anything approaching a primitive status or an arrested development. The Todas would present a most remarkable object lesson in evolution if, as Mr Rivers suggests, they should, under European influence, now evolve from polyandry through group marriage into monogamy. JOHN R. SWANTON.

At the Back of the Black Man's Mind. Or Notes on the Kingly Office in West Africa. By R. E. DENNETT. London: Macmillan & Co.; New York: The Macmillan Co., 1906. 8°, 288 pp.

It is rather curious that in an age so dominated by evolutionary ideas two authors dealing with races in very different parts of the world and under very different conditions should believe that their present social status is a result of degeneration. The above work, very different in scope and object from that of Mr Rivers, above reviewed, deals with the religious beliefs and social customs of the Bavili and Bini tribes of West Africa, but particularly with that higher philosophy which Mr Dennett holds to lie behind it. The book consists largely of reprints of several articles by the same writer in the journals of the African Society, the Anthropological Institute, and the Folk-lore Society, and it is perhaps owing to this fact that they present a certain lack of coherence and leave considerable to be inferred by a reader not already acquainted with the subject or one who does not read with close attention. For the same reason it is difficult to give a proper idea of the philosophy here presented, yet it is too interesting to pass over without making the effort.

Most writers on West Africa have assumed the religion there found to consist of what is called fetishism or *ndongoism*, involving the use of small images supposed to be connected with spirits. These fetishes are divided into two classes: "Zinkici Zinzo or Zinkondi (home protecting figures, charms, and talismans) and Zinkici Zimbowu (figures into which nails are driven)." Mr Dennett gives a very interesting account of them, but he denies that they represent all the religion the two peoples he has investigated possesses. "I believe," says he, "that above and beyond fetishism or Ndongoism . . . there is a higher form of religion among the Bavili which is connected with certain symbols in the form of (1) sacred groves; (2) sacred lands and rivers; (3) sacred trees; (4) sacred animals; (5) omens; and (6) the seasons." In its last analysis Bavili

philosophy is monistic, resolving itself into Nzambi. Nzambi, we are told, means "the personal essence (Impi) of the fours (Zia or Za fours)," and the fours "are the groups each of four powers called Bakici Baci . . . The prefix Ba the plural of N proving that these powers are personalities or attributes of a person, that they are not zinkici like the mere wooden figures." The fours as they exist in mundane things appear to arise from the abstract elements of a trinity of male, female, and evolutional power proceeding from Nzambi. The third of these continues to operate in the world under a slightly altered form, making the fourth abstract power. From a similar combination of male and female elements and their products the second sacred number, six, arises, and in accordance with these two numbers are arranged the six classes above mentioned. Thus there are six primary groups of sacred groves of four each, and although there are many other sacred groves, it is supposed that these originally totalled 144, i. e., 6 times 24. There are also six sacred provinces surrounding the royal province, and the Kuilu, the principal river of the kingdom of Loango, is made to fall into the scheme by using the names of its three tributaries, that of a lake at its head, and an additional name borne by the river in its upper course. Again, there are 24 sacred trees and plants, 24 sacred animals, and 24 omens. Finally, seasons "only exist as factors in six groups of four," each four corresponding to the great abstract four arising from Nzambi, while the groups are of two months each. The whole sequence of months, however, itself represents a process of growth in a living organism, and there is a thirteenth month which stands at one end as the primal cause, and at the other as the ultimate effect and the cause of a new series. For it should be noted that all of the six categories above enumerated proceed in this manner from a primal cause lying outside through an evolution by means of the sexes to a consummation which becomes the cause of a new series.

Bavili property owners receive their right to land from the provincial governors, and these in turn from the king, who himself has no power over it except as the representative of Nzambi on earth. In the last analysis, therefore, it is the deity who owns all Bavili land.

Next Mr Dennett reviews the customs and social organization of the Bini, wherein he thinks he has found traces of the same beliefs, though his case here is naturally not so strong.

Beyond the central thought of this book, of which the reviewer has tried to give an idea, though he is aware an imperfect one, there are very interesting chapters on the constitution of the Bavili and Bini governments, laws, measures, signs and symbols, and the Bavili psychology.

In this material may be noted as of especial interest references to the drum language of West Africa. Regarding the rapidity in which news can be communicated in this manner, Mr Dennett says:

"In 1881, we in Landana heard of the wreck of the mail steamer *Ethiopia* off Luango, sixty or seventy miles away, one or two hours after its actual occurrence, in Luango, by drum message. . . .

"In the early part of 1895 I sent the schooner *Olhanensa* from Luango to a place some sixty miles north, called Konkwatti, for the purpose of picking up some cargo there. One morning about ten o'clock my head man came to me, and after some hesitation told me that he had heard that the schooner was ashore. I could get nothing more definite out of him except that he had heard the 'news.' I knew enough about the rapidity with which bad news travels to believe that this misfortune must have occurred, and set about making the necessary preparations for despatching boats and implements to her rescue, so that the next day, when the messenger confirming the news arrived, all was ready and immediately forwarded. It appeared that the schooner had come ashore during the night previous to the arrival of the unofficial news, which probably had not been communicated to me until some time after it was the common property of the natives; that is to say, the news had traveled the sixty miles or so in three or four hours."

JOHN R. SWANTON.

Proceedings and Collections of the Wyoming Historical and Geological Society for the year 1905. Edited by REV. HORACE EDWIN HAYDEN, M.A., Corresponding Secretary and Librarian. Volume IX. Wilkes-Barré, Pa.: Printed for the Society, 1905. 8°, 249 pp., ills.

Were it not for the fact that the excellent work which the Wyoming Historical and Geological Society is doing is so well known, its name would hardly suggest the extent of its interest in American ethnology and archeology. Such interest is exemplified by the volume before us, for of the eight main papers which it contains, six are devoted to topics of anthropologic interest, as follows:

1. Pioneer Physicians of Wyoming Valley, 1771–1825, by Frederick C. Johnson, M.D. (pp. 47–106).

2. Early Smoking Pipes of the North American Aborigines, by Alfred Franklin Berlin (pp. 107–136).

3. Aboriginal Pottery of the Wyoming Valley-Susquehanna River Region, Pennsylvania, by Christopher Wren (pp. 137–170).

4. Roman Catholic Indian Relics in the Possession of the Wyoming Historical and Geological Society, by Charles F. Hill (pp. 171–174).

5. The Expedition of Colonel Thomas Hartley Against the Indians in 1778, to Avenge the Massacre of Wyoming, by David Craft (pp. 189–216).

6. The Zebulon Butler Tablet and the Zebulon Butler Ethnological Fund, by Rev. Horace Edwin Hayden (pp. 217–224).

1. The paper by Dr Johnson, in addition to rendering much information on the practice of medicine in Wyoming valley a century or more ago, much of it of the folk sort, sheds some light on the Indians of the vicinity and their settlements.

2. Mr Berlin's article on Early Smoking Pipes, with illustrations of numerous forms, gives a brief summary of the early history of smoking among the Indians, with extracts from various authors on this interesting custom. Mr Berlin recognizes the following classes of pipes: Tubular pipes, pipes without stems, double concoidal pipes, mound pipes, monitor or platform pipes, elephant pipes, great pipes or calumets, clay or terra cotta pipes, bird and animal pipes, Micmac pipes, Cherokee pipes, idol pipes, disk pipes, Iroquois pipes, and earth pipes. The author, curiously enough, refers to "the late" Joseph D. McGuire, whose studies of pipes and smoking are so well known, and who is still actively engaged in research along similar lines.

3. Mr Wren's interesting paper on the Wyoming Valley-Susquehanna pottery represents the results of careful and conscientious study, but the character of the pottery of this region and the local conditions are such that it is impossible to determine the tribes which manufactured it, much of the earthenware exhibiting northern types, and a considerable proportion belonging to that which Mr Holmes denominates the Middle Atlantic province. The forms are simple and the vessels were evidently made for utilitarian purposes; the clay is of inferior quality, hence the product is not comparable with that from other sections of the country. Pounded quartz, sharp sand, mica, soapstone, and shell were used as a degraissant; the pottery in which the soapstone occurs is the best ware found. The author thinks that fat may have been used instead of water for making the clay plastic before modeling. Most of the specimens consist of fragments, only about fifty complete vessels being known, a goodly number of which are in possession of the Wyoming Historical and Geological Society. The vessels consisted chiefly of jars or pots, the body of which was always spherical or spheroidal, with round or slightly conical bottom; the neck occupied about one-fourth the height of the vessel; the rim was usually flaring. The capacity of the vessels varied from a quart to ten or twelve gallons. Decoration was confined usually to the rim and neck, although occasionally the entire body was covered with more or less

uniform markings. These were produced with the roulette, a toothed implement, or with a wooden punch. There are indications that some vessels were thinly coated with clay of a color different from that of the paste, while a few others suggest washing with pigment. The soapstone vessels of the region are usually flat-bottomed, and are provided with lugs for the purpose, it is believed, of hanging them over the fire. The body was often drilled with numerous holes, as if designed for use as a colander. The steatite vessels are not so numerous as those of earthenware, nor have steatite deposits been found in the vicinity. Mr Wren observes that at the places where steatite vessels are most numerous, earthenware is rare, and vice versa.

4. Mr Hill's paper on Roman Catholic Indian Relics treats of the interesting but often neglected period of the early contact of whites and Indians. The objects described consist of two small plaster molds (one representing the Virgin Mary, the other the Virgin and the Infant Jesus), and a leaden image of the Virgin. These objects were found in 1885 on the headwaters of the Nescopeck, and are attributed to the "French" Indians who burned and plundered Gnadenhütten (now Weissport, Pa.) in 1755. Another object is a brass crucifix, 2 inches long, found at Wilkes-Barré, and like the others now the property of the Wyoming Historical and Geological Society. Its origin is unknown, but it is believed to have been brought into the valley perhaps as early as 1737.

5. While designedly historical, Mr Craft's interesting paper on the Hartley expedition of 1778 to avenge the Wyoming massacre, contains information regarding the location of certain Indian settlements and battlegrounds. This expedition, which marched from Fort Muncy to Wyoming, a distance of 186 miles, resulted in the destruction of the Indian towns of Tioga, Sheshequin, Queen Esther's Town, and Wyalusing — the last-mentioned having been the site of one of the Moravian missions of Friedenshütten.

6. The Wyoming Historical and Geological Society has established the "Colonel Zebulon Butler Fund," for ethnological purposes, in memory of the commander of the American forces at Wyoming, July 3, 1778, who died at Wilkes-Barré in 1795. The Fund (the nucleus of which was created by the generosity of the Reverend Horace Edwin Hayden, the librarian) now amounts to $600, and the archeological collections of the Society, gathered in the Wyoming valley and the lowlands that border the Susquehanna to the north and west, number more than 20,000 specimens, including 1,000 fine pieces found in the vicinity of Wilkes-Barré and obtained by means of the Fund. In addition, an ethnological library

of 300 volumes has been procured, and a beautiful bronze tablet was erected in 1904 as a further memorial of the hero of Wyoming.

The work of the Wyoming Historical and Geological Society deserves the highest praise. F. W. HODGE.

Columbus, Ramon Pane and the Beginnings of American Anthropology. By EDWARD GAYLORD BOURNE, Professor of History in Yale University. Reprinted from the Proceedings of the American Antiquarian Society. Worcester: 1906. 8°, 41 p.

There is probably no one more deeply versed in the history of the great discovery than the author of the above memoir, consequently a word from him on the very beginnings of American anthropology is not likely to be passed unnoticed by students of the first inhabitants of the New World.

In this most interesting and valuable article Professor Bourne justly characterizes Columbus as in a sense "the founder of American Anthropology," for he "not only revealed the field of our studies to the world, but actually in person set on foot the first systematic study of American primitive custom, religion and folklore ever undertaken." In addition to his interest in the subject of the Indians, as shown by his letters, Columbus commissioned Fray Ramon Pane (not Roman Pane as he is usually but mistakenly called) "to collect all their ceremonies and antiquities." Pane's report, says Professor Bourne, "is not only the first treatise ever written in the field of American antiquities, but to this day remains our most authentic record of the religion and folk-lore of the long since extinct Tainos, the aboriginal inhabitants of Haiti."

Professor Bourne prints a translation of Ferdinand Columbus's abridgment of his father's account of the religion of primitive Hayti, which deals especially with the use of *cemis* (the word, it is shown, is accented on the last syllable), or fetishes, followed by a critical study of Pane's important work, with a list of writings useful to the student of the subject. The great importance of the friar's treatise may be seen from the range of its contents, which includes a cosmogony, a creation legend, an Amazon legend, a legend which offers interesting evidence that syphilis was an indigenous and ancient disease in America at the time of the discovery, a flood and ocean legend, a tobacco legend, a sun and moon legend, a long account of the Haytian medicine-men, an account of the making of their *cemis*, of the ritualistic use of tobacco, a current native prophecy of the appearance in the island of a race of clothed people, and lastly a brief report of the earliest conversions to Christianity in the

island and of the first native martyrs. These twenty-six chapters occupy pages 12–31 of Professor Bourne's paper, which closes with an epitome of the Eden translation of the treatise of Fray Ramon inserted by Peter Martyr in his *De Rebus Oceanicis et Novo Orbe* with some emendations.

Students of the aborigines of the West Indies will be thankful to Professor Bourne for making so readily accessible these sources of information, and for his critical notes on the epitomes of Peter Martyr and Las Casas. F. W. HODGE.

SOME NEW PUBLICATIONS

BUDGE, E. A. WALLIS, *Editor*. The Life of Takla Hâymânôt in the Version of Dabra Lîbânôs, and the Miracles of Takla Hâymânôt in the Version of Dabra Lîbânôs, and the Book of the Riches of Kings. The Ethiopic Texts, from the British Museum MS. Oriental 723, edited with English Translations, to which is added an English Translation of the Waldebbân Version. London: 1906. Privately printed for Lady Meux. Two parts, folio, lxiii, 396, 141 pp., 165 colored pl.

BURNAND, AUG. Le Colonel Henry Bouquet Vainqueur des Peaux-Rouges de l'Ohio. Lausanne: Imprimerie Lucien Vincent, 1906. 8°, 76 pp., 2 pl. (Extrait de la *Revue historique vaudoise.*)

DENSMORE, FRANCES. The Plea of our Brown Brother, and Ke-wa-kun-ah, the Homeward Way. Two Indian Sketches, with Introduction by Hon. Francis E. Leupp, Commissioner of Indian Affairs. Chilocco: Indian Print Shop Press, 1906. 8°, 8 ll., 2 pl.

Two sympathetic sketches by an earnest student of the Indians, particularly of their music. The mechanical part is the work of the Chilocco Indian School and is highly creditable in every way.

DORSEY, ELLA LORAINE. Pocahontas. Second edition. Washington: The Howard Press, 1906. 8°, 58 pp., ill.

The author has assembled much material regarding the life of this celebrated Virginia squaw.

DORSEY, GEORGE A. The Pawnee. Mythology (Part I). Collected under the Auspices of the Carnegie Institution of Washington. Washington: Carnegie Institution of Washington, 1906. Roy. 8°, 546 pp.

Of the 148 myths given, numbers 1 to 38 are "True Stories of the Heavenly beings," 39 to 76 are tales of Ready-to-Give, 77 to 116 are on the The Origin of Medicine Ceremonies or Power, and 117 to 148 are Coyote tales. Pages 473 to 546 are devoted to abstracts of the myths. To be reviewed in a forthcoming issue.

DRIGGS, JOHN B. Short Sketches from Oldest America. Philadelphia: George W. Jacobs & Co. [1905]. 12°, 163 pp., ill.

Notes on the ethnology and folklore of the Eskimo of the Arctic coast of Alaska by a physician and missionary among the natives of Point Hope.

ELLIS, GEORGE W. and MORRIS, JOHN E. King Philip's War. Based on the Archives and Records of Massachusetts, Plymouth, Rhode Island and Connecticut, and Contemporary Letters and Accounts. With Bibliographical and Topographical Notes. New York: Grafton Press: [1906.] 12°, xv, 326 pp., ill.

FÖRSTEMANN, ERNST. Commentary on the Maya Manuscript in the Royal Library of Dresden. Translated by Miss Selma Wesselhoeft and Miss A. M. Parker. Translation revised by the author. Cambridge, Mass. 1906. (Papers of the Peabody Museum of American Archæology and Ethnology, Harvard University, Vol. IV, No. 2.) 8°, pp. 49–256, 1 pl.

See Dr Tozzer's appreciation of the work of Dr Förstemann on another page.

FOY, W. Führer durch das Rautenstrauch-Joest-Museum (Museum für Völkerkunde) der Stadt Cöln. Preis 50 Pfennig. Coln: Druck von M. Dumont Schauberg, 1906. 16°, (iv,) 220 + 1 pp., ill.

An excellent and handy catalogue of this museum. Some American objects are described and illustrated.

GEORGE, PAUL. Das heutige Mexiko und seine Kulturfortschritte. Beiheft zu den Mitteilungen der Geographischen Gesellschaft (für Thüringen) zu Jena. Jena: Gustav Fischer, 1906. 8°, 133 pp., 34 pl.

JAYNE, CAROLINE FURNESS. String Figures. A Study of Cat's-cradles in Many Lands. With an Ethnological Introduction by Alfred C. Haddon. New York: Charles Scribner's Sons, 1906. Roy. 8°, xxii, 407 pp., 17 pl., 867 figs.

JOHNSON, WALTER, and WRIGHT, WILLIAM. Neolithic Man in North-East Surrey. With a Chapter on Flint by B. C. Polkinghorne. Cheaper reissue. London: Elliot Stock, 1906. viii, 200 pp.

JORDAN, FRANCIS, JR. Aboriginal Fishing Stations on the Coast o the Middle Atlantic States. Philadelphia: [The Author,] 1906. 12°, 45 pp., ill.

A good summary by an enthusiastic student of American archeology.

KIDD, DUDLEY. Savage Childhood: A Study of Kaffir Children. London: Adam and Charles Black, 1906. xvi, 314 pp.

KROEBER, A. L. The Yokuts Language of South Central California. University of California Publications in American Archæology and Ethnology, Vol. 2, No. 5, 1906. Roy. 8°, 213 pp.

A linguistic study, with primary attention to morphology, of the Yokuts or Maripsoan family of California. Part I, comprising about half the paper, deals with the Yaudanchi dialect typical of the Foothill half of the family. Part II deals more briefly and comparatively with the Yauelmani dialect representative of the Valley half of the family. Part III discusses the lexical, grammatical, and phonetic relations of the larger divisions of the family and of the forty dialects into which they are subdivided, together with the similarities and dissimilarities of the family as a whole to other families of California. The Yokuts language is of the simple Californian type, but is specially characterized by an elaborate system of vowel mutations, by polysyllabic stems, and by the lack of derivation by affixion.

MOOREHEAD, WARREN K. A Narrative of Explorations in New Mexico, Arizona, Indiana, etc. Together with a Brief History of the Department. (Department of Archæology, Phillips Academy, Bulletin III.) Andover, Mass.: Andover Press, 1906. 8°, 179 pp., 82 fig., and Appendix ("A Brief Description of Flint Ridge," by Gerard Fowke), 11 unnumbered leaves.

PITT-RIVERS, A. LANE-FOX. The Evolution of Culture and Other Essays. Edited by J. L. Myres. With an Introduction by Henry Balfour. Oxford: Clarendon Press, 1906. 12°, xx, 232 pp.

PRUDDEN, T. MITCHELL. On the Great American Plateau. Wanderings among Canyons and Buttes, in the Land of the Cliff-Dweller, and the Indian of To-day. New York and London: G. P. Putnam's Sons, 1906. 16°, viii, 243 pp., ill.

We agree entirely with the statement in the announcement that this is "a picturesque account, based upon long acquaintance with, and a careful study of, the history of the great highland country in the southwestern United States, over which lies the romance of the early Spanish explorers and the mystery of the primitive inhabitants."

ROMERO, BELISARIO DIAZ. Tiahuanacu. Estudio de Prehistoria Americana. La Paz: Imprenta de Castillo y C^a^, 1906. 8°, 4 ll., 85 pp.

RUTTENBER, E. M. Footprints of the Red Men. Indian Geographical Names in the Valley of Hudson's River, the Valley of the Mohawk, and on the Delaware: Their Location and the Probable Meaning of some of them. [Newburgh, N. Y. ?] Published under the Auspices of the New York State Historical Association, [1906]. 8°, 241 pp., ill.

One of the best books of its kind, by the author of *History of the Indian Tribes of Hudson's River*, a standard work on the New York tribes.

SIRELIUS, U. T. Über die Sperrfischerei bei den Finnisch-Ugrischen Völkern. Eine Vergleichende Ethnographische Untersuchung. Helsingfors: Finnischen Literatur-Gesellschaft, 1906. 4°, 486 p., 607 figs.

THOMAS, N. W. Bibliography of Folk-lore. 1905. London: Published for the Folk-Lore Society by David Nutt, 1906. 8°, 36 pp.

Includes only books and periodicals published in the British Empire during 1905, consequently the Western Hemisphere is dismissed with fifteen titles.

THOMAS, WILLIAM I. Sex and Society. Studies in the Social Psychology of Sex. Chicago: University of Chicago Press; London: T. Fisher Unwin, 1907. 12°, vii, 325 pp.

TOZZER, ALFRED M. A Comparative Study of the Mayas and the Lacandones. New York: The Macmillan Co., 1907. 8°, xxi, 195 pp., 29 pl., 51 fig.

Report of the Fellow in American Archæology of the Archæological Institute of America, 1902–1905. To be reviewed in a subsequent issue.

WOOD, NORMAN B. Lives of Famous Indian Chiefs from Cofachiqui, the Indian Princess, and Powhatan; down to and including Chief Joseph and Geronimo. Also an Answer, from the Latest Research, of the Query, Whence came the Indian? [etc.]. Aurora, Ill.: American Indian Historical Publishing Co., 1906. 8°, 771 pp., ill.

WUNDT, WILHELM. Völkerpsychologie. Eine Untersuchung der Entwicklungsgesetze von Sprache, Mythus und Sitte. Zweiter Band: Mythus und Religion. Zweiter Teil. Leipzig: Wilhelm Engelmann, 1906. 8°, viii, 481 pp., figs.

PERIODICAL LITERATURE

CONDUCTED BY DR ALEXANDER F. CHAMBERLAIN

[NOTE. — Authors, especially those whose articles appear in journals and other serials not entirely devoted to anthropology, will greatly aid this department of the *American Anthropologist* by sending directly to Dr A. F. Chamberlain, Clark University, Worcester, Massachusetts, U. S. A., reprints or copies of such studies as they may desire to have noticed in these pages. — EDITOR.]

GENERAL

Beatty (A.) The St. George, or mummers', plays; a study in the protology of the drama. (Trans. Wisc. Acad. Sci., 1906, XV, pt. II, 273–324.) This well-documented and interesting monograph treats of the English "St. George Play," the European ceremonies (summer and winter play), the Australian food (intichiuma) ceremonies, the initiation ceremonies of Australia, Oceania, etc., the American Indian initiation, agricultural and kindred ceremonies. The author sees in the ceremonies of primitive peoples (the attempt by "magic" of man to influence nature), the prototypes of the St George play (in which there is "the mock struggle or the mock death, now scarcely magic, almost entirely entertaining").

Boman (E.) Hjalmar Stolpe. (J. Soc. Amér. de Paris, 1906, N. S., III, 94–97.) Brief account of scientific activities with list of publications.

Boule (M.) Édouard Piette. (L'Anthropologie, Paris, 1906, XVII, 214–224, 2 fgs.) Sketch of life and scientific activities of Piette, the distinguished archeologist, well known through his writings on prehistoric man, particularly caveman in France. The bibliography of his publications appended (*ca.* 100 titles) shows him to have covered the fields of geology, paleontology, prehistoric archeology and ethnology, anthropology, epigraphy, and literature. A biography of Piette (d. June 5, 1906) was published by Henry Carnoy in 1902.

Buchner (M.) Das Bogenschiessen. (Globus, Brnschwg., 1906, XC, 75–79, 85–90, 12 fgs.) Based partly on experiment. Treats of methods of stretching the bow (English, ancient Greek, Chinese, Japanese, primitive peoples), methods of arrow-release (critique of Morse's classification), aiming, "drawing up to the ear," etc. B. notes that the bow, as a military weapon, was abolished in China by an imperial edict of July 21, 1905. He suggests its use for exercise in Europe.

Dressler (G.) Fusspfad und Weg geographisch betrachtet. (Mitt. d. Ver. f. Erdk. zu Leipzig, 1905 [1906], 137–239, 8 pl.) Comprehensive study of typical foot-paths and roads (foot and pack roads, — polar, mountain, steppe and desert, bog, forest, etc., — primitive sled and wagon paths, artificial roads, — highways, railroads), their origins (natural, human), distribution over rhe globe, etc. The *anass-nieda* of the North Asiatic tundra, the Chilean *laderas*, the mountain-passes of central Asia and Europe, the thicket-paths of central Africa, the prairie and *llano* ways of the New World, the caravan-roads of the Old World deserts, the swamp-paths of northern Europe, the paths through the primitive forests of South America and the East Indies, etc., the sled-routes of Arctic Siberia, the wagon-paths of old and new Asia, are considered. Also primitive bridges, etc. Paths are older than man, for the animals trod them before him.

Fischer (E.) Die Variationen an Radius und Ulna des Menschen. (Z. f. Morph. u. Anthrop., Stuttgart, 1906, IX, 147–247, 4 pl., 16 fgs.) Treats in detail, with measurements, of variation, length and thickness, form (whole, parts), etc., the radius and ulna in 117 human (25 Badenese, 1 Lapp, 14 African, 6 Australian, 6 Polynesian, 18 Melanesian, 6 Negritos from Philippines, 3 Vedda, 2 Senoi, 9 Burmese, 1 Chinese, 3 Japanese, 6 Fuegian, 17 prehistoric European, —

also Neandertal, Spy, Naulette, Krapina), 23 anthropoid (4 gibbon, 2 chimpanzee, 5 gorilla, 12 orang-utan) and 28 lower monkey forearms. The primates show a great range of variation for the whole group and for individual groups; only a greater frequency of this or that characteristic distinguishes one race from the other. The Neandertal man is a species by himself. The lowest characters appear in the Fuegians and Melanesians; then follow Negritos, Australians, Veddas, Senoi. The Negro, except in ulnar curve, is nearer to the European than the others. There is no absolutely "lower" race. The anthropoids are nearer man than the other apes, but no one of them leads the rest.

Frazer (J. G.) Negative magic. (Man, Lond., 1906, 55-56.) Notes that author's theory that "taboo is merely negative magic," has in a certain way been anticipated by Hubert and Mauss in their essay on the general theory of magic published in the seventh volume of *L'Année Sociologique*.

Frédéric (J.) Untersuchungen über die Rassenunterschiede der menschlichen Kopfhaare. (Z. f. Morph. u. Anthrop., Stuttgart, 1906, IX, 248-324, 2 pl., 13 fgs.) Treats in detail of the anatomical and other characteristics of the hair, grouping, form of follicles, thickness, section, form of papilla, form of roots, glands, *musculi arrectores*, outer sheath, etc., in 1 Japanese, 2 Chinese, 4 Hindus, 1 Tamil, 1 Armenian, 3 Alsatians, 1 Badenese, 1 Italian, 1 red Alsatian, 1 European, 1 Arab, 1 Gaafri, 1 Abyssinian, 1 Fellah, 4 Negroes, 1 Solomon Islander. In the arrangements of the glands and muscles of the hairs no race-differences are shown. Such differences, however, occur in the form and insertion of the follicles, curvation, cross-section, thickness of skin, hair, etc. According to F., the Vigier-Bloch "crête sémi-circulaire oblique" is not the primary cause of the curvation of the hair and follicles in the negro; the term "woolly hair" is incorrect. Hair-groups of two preponderate with the neotrichs. Groups of 7 are rare, 2-5 being the range in all races.

Höfler (M.) Das Herz als Gebildbrot. (A. f. Anthr., Brnschwg., 1906, N. F., V, 263-275, 20 fgs.) Treats of symbolic bread, etc., in the form of a heart. As an object of folk-medicinal significance the heart, as the position as votive gift and symbolic bread shows, is connected with the cult of sacrifice; it represents indeed, one of the "diminished" forms of human sacrifice (*similia similibus*); once devoured hot from the body, it is now eaten in symbolic form, belief in its virtue not having yet disappeared. H. holds that the two-lobed form of symbolic heart-bread is of Coptic Egyptian origin. From Coptic monks these passed to Italy, thence to Germany.

Kirschmann (A.) The possibility of life in other worlds. (Trans. R. Astron. Soc. Can. 1905, Toronto, 1906, 129-174.) Seeks to disprove the contentions of A. R. Wallace in his recent book, *Man's Place in the Universe*. K. argues that "the cosmologist W. completely abandons the ideas of the evolutionist W."

Lang (A.) Quæstiones totemicæ. (Man, Lond., 1906, 51-54.) Replies to Hartland's criticism of L.'s use of Darwin. Thinks nothing can be done but marking time, till the question which of the Australian tribes are the more primitive and which the more advanced is settled satisfactorily.

—— The totem taboo and exogamy. (Ibid., 130-131.) Author admits the error of his hypothesis, that "intertotemic marriage is forbidden as part of the totemic taboo." He still holds to Atkinson's primal law theory.

Lasch (R.) Das Marktwesen auf den primitiven Kulturstufen. (Z. f. Socialw., Berlin, 1906, IX, 619-627, 700-715, 764-782.) Valuable and interesting account of markets and kindred institutions and devices among primitive peoples of all parts of the globe. "Silent trade," intertribal exchange, sex aspects of trade (preponderance of women as marketers), character of goods exchanged (food a chief article), choice of market-place (according to political relations), connection of market and tree-cults, extra-mural markets, development of markets into villages and towns, markets and calendars, days and times of markets, "market-peace," weapon-taboo, market justice and punishments, market taxes, fixing prices, amusements, etc., connected with markets, markets and the merchant profession, means of intercourse, etc. The existence of such an important cultural element, as the invention of market-trade indicates, at a comparatively low stage of civilization, is rather surprising. The moral results of this invention have been very great.

Lejeal (L.) Henri de Saussure. (J.

Soc. d. Amér. de Paris, 1906, N. S., III, 97-99.) Brief sketch of activities and appreciation of chief works. De Saussure (d. 1905) was a "Mexicanist" in particular, the discoverer of the great *teocalli* of Tihuatlan.

Martin (R.) Zur Frage der anthropometrischen Prinzipien und Methoden. (Globus, Brnschwg., 1906, XC, 31-33.) Replies to Dr Weissenberg's discussion and critique of the scheme of investigation of the German Anthropological Society.

Mazzarella (G.) Die neuen Methoden der ethnologischen Jurisprudenz. (A. f. Anthr., Brnschwg., 1906, N. F., V, 227-243.) Discusses the new methods of ethnological jurisprudence (morphology, stratigraphy, genealogy, psychology, philosophy). The goal of ethnological jurisprudence as a science is "the constitution of an inductive philosophy of law, which shall investigate with methodic exactness the laws governing the evolution of legal life and the various causes which produce them."

Morice (A. G.) La linguistique considérée comme critérium de certitude ethnologique. (Anthropos, Salzburg, 1906, I, 112-125.) Criticizes physical characters, sociological and psychological facts, archeological remains, mythology, etc., as race-criteria, concluding that language, so successful in American ethnology, is the best of all.

Myers (C. S.) Note on the relative variability of modern and ancient, and rural and urban peoples. (Man, Lond., 1906, 24-26.) From craniometrical data concerning the ancient and modern and the rural and urban population of Egypt, Germany and France, M. concludes that "age alone does not produce in a people increased heterogeneity," and also that townsfolk are more variable than the inhabitants of country villages.

Papillault (G.) Mon opinion vraie sur un point de morphogénie osseuse. (Bull. Soc. d'Anthrop. de Paris, 1906, V^e^ S., VII, 68-70.) Corrects inexact interpretations of the author's theory of explanation of skeletal fossettes by means of bio-chemic actions exercised by the muscle on the ossification.

Paterson (J. A.) The astronomy of Tennyson. (Trans. R. Astron. Soc. Can. 1905, Toronto, 1906, 112-124.) Author cites numerous passages exhibiting T.'s accurate (far more than mere literary) knowledge of astronomic facts and theories. "He spiritualized astronomy and brought it into poetry. He wove the rough strands of evolution into the golden braid of poetry." Many who rejected Darwin and Huxley listened to him. Tennyson sought accuracy in the use of his metaphors and discarded poems sometimes on account of scientific flaws.

Puccioni (N.) Gli oggetti musicali del Museo Nazionale d' Antropologia. (A. p. l'Antrop., Firenze, 1906, XXXVI, 59-84.) Lists, with brief descriptions, 152 musical instruments, etc. (percussion, stringed, and wind) from various parts of the world — Australia, New Guinea, Viti, New Ireland, New Britain, Tahiti, Java, Sumatra, Nias, Engano, Mentawei Is. (many specimens), Celebes, Africa (many specimens), Asia (Arabians, Ostiaks, Cheremiss, Turkomans, Siamese, Chinese, etc.), South America (Uaupès, Chiriguani, Lenguas, Matacos, Chiamacocos, Caduvei, Miranhas, Caribs, etc.) now in the National Anthropological Museum, Florence — the collection of Ethiopian musical instruments on exhibition at Milan is not included in this account. The Fuegians, Micronesians, and Veddas have been set down as people who do not possess musical instruments, but this question is not settled, and, as the author notes, the Fuegians certainly sing — the women more than the men (with the Australians it is vice-versa).

Read (C. A.) Anthropology at the Universities. (Man, Lond., 1906, 56-59.) Gives the syllabus of the subjects for examination in Anthropology for the diploma recently established at Oxford, and the curriculum in Archeology added by the University of London to the subjects in which degrees may now be taken. See also pp. 85-86, a communication by W. H. L. Duckworth *et al.*

Schmidt (W.) Die moderne Ethnologie. L'ethnologie moderne. (Anthropos, Salzburg, 1906, I, 318-387, 592-643.) Continuation in both German and French of detailed discussion of modern ethnological theories, etc. The chief ethnologists considered are Topinard, Peschel, Broca, Waitz, Tylor, Brinton, Müller (F.), Bastian, Ratzel, Léon de Rosny, Deniker, Ripley, Keane, Winternitz, Schmidt (E.), Martin (R.), Achelis, Post (H.), Vierkandt, etc. S. protests against the denial of individuality to savages, and rightly.

Thomas (N. W.) Questionnaire on dolls. (Man, Lond., 1906, 105–106.) Formulates questions under 21 heads, from doll-names to magic uses. Points of contact between dolls and (*a*) magical figurines, (*b*) idols, (*c*) votive offerings, and (*d*) costume figures are especially interesting.

Verneau (R.) La XIII^e^ Session du Congrès international d'Anthropologie et d'Archéologie préhistorique. (L'Anthropologie, Paris, 1906, XVII, 103–142.) Brief account of proceedings, with valuable résumés and notes on papers and discussions at the Thirteenth International Congress of Prehistoric Anthropology and Archeology at Monaco.

Weissenberg (S.) Anthropometrische Prinzipien und Methoden. (Globus, Brnschwg., 1906, LXXXIX, 350–351.) Discusses principles and methods of anthropometry with reference to the scheme of the committee for a physical anthropological investigation of the population of the German Empire.

EUROPE

Abercromby (J.) A neolithic "pintadera (?)" from Derbyshire. (Man, Lond., 1906, 69–71, 6 fgs.) Describes briefly a *pintadera* or portable stamp found with three lumps of red ocher in a neolithic cist near the village of Biggin, which contained a human skeleton, a deers-horn hammer-head, a pair of boar-tusks, flint implements, and a small clay vessel suggesting intercourse with southern Europe.

Alcalde del Rio (H.) Las pinturas y grabados de las cavernas prehistóricas de la Provincia de Santander. (Portugalia, Porto, 1906, II, 137–178, 10 pl., 3 fgs.) This valuable article treats of the paintings, engravings, ornamental figures, archeological remains, etc., in the prehistoric caverns of Altamira, Covalanas, Hornos de la Peña, and Castillo. The cavern of Altamira is the type-representative of the prehistoric esthetics of this locality, and one may speak of "the art of Altamira." The cavern of Covalanas marks a great "degeneration" in this art. Hornos de la Peña resembles Altamira much, but has no colored figures. See *Nouvelles Découvertes*.

Arutinov (A. A.) Udinij. Materialy dlya antropologii Kavkasa. (Izv. Imp. Obch. Lub. Est., Antr., etc., Moskva, 1905, XXIII, 1–134 + XXXVII, 7 fgs.) Historical and ethnographic sketches of the Udes of the Caucasus, with details of anthropometric measurements of 150 individuals (the total population is *ca.* 8,000). The marriage customs exhibit traces of matriarchy and exogamy. The Udes are rather short and brachycephalic (av. index 86.89, absence of dolich. and sub-dolich.). Bibliography of 36 titles.

Bloch (A.) Couleur des cheveux et des yeux de 12,015 Françaises. Taille de 11,704 Françaises et de 491 étrangères (prostitutées), d'après le Dr Parent-Duchatelet. (Bull. Soc. d'Anthr. de Paris, 1906, V^e^ S., VII, 11–24.) Résumés and reproduces from Dr Parent-Duchatelet's *La Prostitution dans la Ville de Paris* (2 vols., 3^d^ ed., Paris, 1857) data concerning the color of hair and eyes and stature of some 12,000 Parisian prostitutes, inscribed at the Prefecture of the Seine, 1816–1831 (up to 1828 girls of 10–15 were entered, subsequently only those over 15). Black and chestnut hair increases from north (where brown is less prodominant) to south in France, blond increasing from south to north (also red) — no great difference of distribution exists for city and country. Gray eyes are most common, then brown and blue, black and red being least frequent (no large differences for town and country). The average statures are for Paris 1.526 mm., sub-prefecture of the Seine 1.553, north division 1.544, central 1.544, south 1.551, towns 1.555, villages 1.541, all France 1.538, foreign 1.565. If there is a real diminution of stature in prostitutes, it is due to the fact of so many of them coming from the poor classes.

Capitan (L.) Une couche de silex taillés, usés, sur la terrasse moyenne du Moustier. (Ibid., 65–67.) Describes, from investigations of September, 1905, the succession of strata in the classic "station" of Moustier; also the presence of a layer of worn, worked flints on the middle terrace, the flints of the strata above and below not being worn. The explanation of this intercalation is not present.

Cardoso (F.) Castro Laboreiro. Ensaio anthropologico. (Portugalia, Porto, 1906, II, 179–186, 9 fgs.) Gives results of anthropological measurements (color of skin, hair, eyes, form of face, nose, head, stature, etc.) of 22 men and 16 women from the mountainous region of Castro Laboreiro, to whom in Alto-Minho the name of *Castrejo* is given. This human type is below average stature, swarthy, mesatidolichocephalic,

long-faced with prominent cheek-bones, retreating forehead and marked glabella, microseme, straight-nosed, etc. It is probably identical with the type of the kitchen middens of Mugem.

Cartailhac (E.) Tombe romaine, place Saint-Sernin, à Toulouse. (Bull. Soc. Archéol., Toulouse, 1905, 171–172.) Brief account of Roman tomb probably of fourth century, but subsequently broken into.

—— Fouilles du temple de Vénus, à Vendres Hérault, par M. F. Mouret. (Ibid., 172–174, 1 pl.) Notes on ruins of a "temple of Venus" and relics found at Vendres in 1904: copper or bronze implements, fragments of pottery belonging to the first century.

—— Analyse de l'ouvrage de M. Déchelette: les vases céramiques ornés de la Gaule romaine. (Ibid., 183–197.) Critical résumé of Déchelette's recent work (1904) on ornamented pottery of Roman Gaul. The manufactures of Graufesenque, Banassac, Lezoux, Montans, etc., are considered; also types, decorative motives.

—— A propos des statues menhirs de l'Aveyron et du Tarn. (Ibid., 258–270, 14 fgs.) Treats of the Aveyron-Tarn-Hérault series of menhir-statues (Saint-Sernin, Saint-Affrique, Serregrand, Vabre, etc.), which are in several respects homogeneous. These statues number now 27 in Aveyron and Tarn. They may be related to certain objects (Cretan statuettes, etc.) of the prehistoric culture of the eastern Mediterranean, with which C. compares them.

Clark (E. W.) Roman terra-cotta lamps. (Rec. of Past, Wash., 1906, v, 170–186, 5 fgs.) Treats of names (lychnus, lucerna), material, uses (private houses, public buildings, temples, tombs, augury, gifts), types (the Esquiline is the oldest: five classes besides fanciful shapes), subjects represented on lamps (gods, heroes, historical and literary subjects, scenes from the theater, circus, amphitheater, etc., erotic and obscene subjects, animals of all kinds, inanimate objects, geometric, floral designs, etc.), inscriptions and potters' marks.

De Loe (A.) The dolmen of Weris. (Ibid., 116–117, 1 fg.) Note on the old dolmen of Weris, near Barvaux-sur-Ourthe in Belgium, which has belonged to the state since 1882. Another dolmen was uncovered here in 1888. The author thinks them *ca.* 4000 years old.

—— Prehistoric places around Couvin, Belgium. (Ibid., 148–150, 1 fg.) Notes on a collection of flint implements presented to the Royal Museum (Brussels) and the localities where they are found. These two brief articles are translated from the *Bulletin des Musées Royaux*.

Delorme (E.) *et* **Massip** (M.) Les Emblèmes de l'Inquisition de l'Espagne. (Bull. Soc. Archéol., Toulouse, 1905 [1906], 339–345, 1 fg.) Discusses the nature and origin of the official escutcheon of the Spanish Inquisition. The "square of the sower," is an altered magic square.

Egbert (J. C). Augustus' altar of peace. (Rec. of Past, Wash., 1906, v, 104–111, 4 fgs.) The magnificent picture reliefs "are the first examples of the superb imperial art still further illustrated and glorified by the sculptures on the arches of Titus and Trajan." In these reliefs are found "the primary elements of style of the Roman triumphal art," which finally produced "the continuous method of representation so important in medieval art even down to the time of Michel Angelo."

—— Santa Maria Antiqua. (Ibid., 131–137, 6 fgs.) Describes an old church of the eighth century, whose ruins now rise between the temple of Castor and the Palatine in the Roman forum, its frescoes, sarcophagi, etc.

Feit (P.) Das deutsche Volksrätsel. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, Heft XIV, 1–33.) Treats of German folk-riddles, their characteristics, distribution, antiquity, survival in literary language, etc. — the riddle is often found incorporated in and with tales, märchen, songs, jests, etc. (Müllenhoff thought that modern riddles were only fragments of old dialogue riddle-songs, "song-duels," and the like). Intentional ambiguity is a special feature of folk-riddles, Low German in particular. *Sui generis* are the gallows riddles. Dr F. urges a collection of Silesian folk-riddles.

Haberlin (*Dr*) Gnidelsteine. (Globus, Brnschwg., 1906, LXXXIX, 348–349, 6 fgs.) Treats of the so-called "gnidelsteine" (smoothing-stones) still in use on the island of Föhr. They are not of stone, but glass, and not merely employed for "smoothing," but for plugs (*e. g.*, in darning stockings) and for pounding and grinding food, etc. In the historical period the object in question has run through the stages from smoothing-stone to plug, rubber, striker.

Hamy (E. T.) Les premiers gaulois. (L'Anthropologie, Paris, 1906, XVII, 1–25, 2 fgs.) This first part of a monograph on the ancient Gauls treats of the skeletons of the tumuli of Beaunois (Auvenay, Méloisey) and Châtillonnais Magny-Lambert, Minot, Savoisy, the great wood of Châtillon). Many skulls are described, with measurements. The "first Gauls" are identical with their barbaric successors in the West up to the beginning of the Middle Ages.

Hedinger (A.) Das wirkliche Ende der Nephritfrage. (Globus, Brnschwg., 1906, LXXXIX, 356–358.) Discusses in particular the recent nephrite finds of Schröder in the Tirol and the find of Heller at Piz Longhin in the Engadine. These and other local finds settle the question in favor of a European origin of the nephritic implements of central Europe.

Hermet (*L'Abbé*). La statue-menhir de Frescaty, commune de Lacaune, Tarn. (Bull. Soc. Archéol., Toulouse, 1905–1906, 270–273, 1 fg.) Brief account of a menhir-statue of Frescaty, of the same type as that of Saint-Sernin. See *Cartailhac* (*E.*).

Hervé (G.) Contribution à l'histoire des mégalithes. (Bull. Soc. d'Anthr. de Paris, 1906, V^e^ S., VII, 70-73.) Notes on the survival of megalithic cults, as indicated by the megalithic ceremony (addressed to the devil) testified to by one of the witnesses and accomplices in the trial at Nantes in 1440 A.D. of the famous Gilles de Laval, Maréchal de France and Sire de Rays.

Hunger (R.) Die Schwemmlandküste des Arno. Versuch der Begrenzung eines Küstensaumes nach Innen. (Mitt. d. Ver. f. Erdk. zu Leipzig, 1905 [1906], 1–135). Pages 41–51 of this interesting monograph treat of biogeography, settlement, etc. The changes in sea-level, etc., influenced the course of human history in this region, which in early historical times was inhabited by a powerful sea-folk, the Etruscans. Today the only large cities on the coast are Leghorn, Pisa, and Lucca. Improvement in sanitation is now doing much for this coast region.

Jaeger (J.) Der Schliersee. (Globus, Brnschwg., 1906, LXXXIX, 363–367.) Treats geology, topography, and history of Lake Schlier. Some notes on archeology (prehistoric population rare) and ethnology, evidences of sojourn of Romans, Bajuwari (immigrated in sixth century), *Reihengräber* people, etc.

Jeffers (S. A.) The birth of Venus: a Greek relief and a renaissance painting. (Rec. of Past, Wash., 1906, V, 204–213, 2 fgs.) Compares a relief of the birth of Aphrodite, excavated in Rome in 1887 (it dates from *ca.* 470 B.C.) with Botticelli's painting of the birth of Venus. B's picture is part of the effort of Italian art to free itself from the Middle Ages.

Kahle (B.) Noch einmal die "Gräber der Wöchnerinnen." (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, Heft XIV, 59–60.) Cites evidence from the village of Bukedorf in Schaunburg as to "fencing" of the graves of women dying in child bed. Stepping over such a grave will bring the same fate on the transgressor, in folk-belief.

Kendall (H. G. O.) Investigations at Knowle farm pit. (Man, Lond., 1906, 38-41, 3 fgs.) Gives account of investigations of 1904. The pit contains flaked stones of mesolithic (?) age close to surface; an occasional paleolith close beneath the turf; blue white rolled and striated implements in the "dirt"; in a sandy river drift, flakes and many trimmed flints, hammer-stones, some burnt flints, etc.; in ocherous gravel implements, cores, and at the base rolled and unrolled (beautifully made) implements; on chalk large flints.

—— A correction and a note on the gloss on flint implements. (Ibid., 115–116, 1 fg.) Submits amended drawing of original figure showing present condition of pit. Doubts that there is connection between the gloss and certain accretions and incrustations.

Kiessling (—) Darstellungen einer zusammengehörigen Fundgruppe aus Knossos auf Kreta. (Z. f. Ethnol., Berlin, 1906, XXXVIII, 346–347.) Notes on a group of a Cretan goddess with three serpents and two smaller figures of worshiping women. The material is fayence.

Klapper (J.) Beschwörungsformeln bei Gewinnung der Wünschelrute. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, Heft XIV, 51–58.) Cites conjuration formulæ for getting the diviner's rod, from the fifteenth century, Bavarian and Bavarian-Austrian.

Klemenz (P.) Zum Gebrauche des Artikels vor Orstnamen. (Ibid., 105–107.) Treats of the use of the article in Silesian place-names, a practice quite old

(*Zum Slegil*, e. g., occurs in 1407). Numerous examples are given.

Knoop (O.) Aberglaube und Brauch aus der Provinz Posen. III. Krankheiten, Tod und Begräbnis; das Leben nach dem Tode. (Ibid., 70–77.) Cites 70 items of superstitious belief and custom relating to diseases, death and burial, life after death, etc., from various localities in the province of Posen.

—— Die Freimaurer im Volksglauben. (Ibid., 58–59.) Cites Polish items indicating popular belief in the connection of the Freemasons with the Devil.

Kolb (K.) Einfluss der Rasse und Häufigkeit des Krebses nach dessen Verbreitung im Kanton Bern. (Dtsche. Vjhrsschr. f. öff. Gesdhtspfl., Brnschwg., 1906, XXXVIII, 544–562, 2 maps.) Dr K. concludes that other factors than those of race must explain the local variations in the frequency of cancer in Switzerland.

Kollmann (J.) Der Schädel von Kleinkems und die Neandertal-Spy-Gruppe. (A. f. Anthr., Brnschwg., 1906, N. F., V, 208–226, 5 fgs., bibl.) Treats of the skull of Kleinkems (upper part of cranium; neolithic, brachycephalic, index *ca.* 83); the skulls of the Neandertal-Spy group; the relations of the living anthropoids (chimpanzee is nearest) to man, marks of convergence, orthogenesis in human evolution, etc. Dr K. concludes that the *Pithecanthropus* (Dubois) is not in the direct line of human descent, which was furnished rather by a close relation of the chimpanzee in the Tertiary age; the prominent orbital ridges and retreating foreheads of the Neandertal-Spy group are "extreme forms of variability in the white race and not marks of a special species," — such marks in the anthropoids of to-day, in the *Pithecanthropus*, in Europeans, and Australians, are convergence phenomena, not marks of descent; specialized forms lack phyletic reproductivity, and the physical evolution of man proceeded from a non-specialized (indifferent) form. See *Micg* (M.).

Kühnau (—.) Zaubermittel gegen Krankheiten und leibliche Schäden, besonders das Versprechen; Sympathie. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, Heft XIV, 86–94.) Cites, from Patschkau and the region thereabout, numerous folk-remedies, charms, etc., against warts, eye troubles, tetter, open wounds, consumption, erysipelas, toothache, earache, sore breast, etc.

Mehlis (C.) Archäologische Forschungen in der Pfalz. (Globus, Brnschwg., 1906, LXXXIX, 367–368, 2 fgs.) Treats briefly of the finds (body and ornaments of ladies of older Hallstatt period) in graves at Benzenloch, near Speyerdorf, in 1903, etc. The finds in this region indicate the continuity of the connection between the central Rhine country and the Rhone country from the oldest bronze age to the Hallstatt period.

Mieg (M.) Zwei neue, in der Umgegend von Kleinkems (Baden) und Sierentz (Ober-Elsass) entdeckte neolithische Stationen. (A. f. Anthr., Brnschwg., 1906, N. F., V, 204–207, 1 pl., 1 fg.) Brief account of finds at newly discovered "stations" of Kleinkems (animal bones, worked bones, flints, etc., pottery fragments, human skull and a right metacarpus I.) and Sierentz (animal bones, flints, bone tool, pottery, fragments, etc.) At Kleinkems some bones of the horse (very rare in the stone age pile-dwellings of Switzerland) were found. See *Kollmann*.

Murko (M.) Zur Geschichte des volks tümlichen Hauses bei den Slawen. II Teil. (Mitt. d. Anthr. Ges. in Wien, 1906, XXXVI, 92–129, 9 fgs.) Discusses in detail South Slavonic names for the house, and its various parts; Slavonic loan-words from German, particularly those relating to the "High German house"; the table, its names, etc., among the Southern Slavs. In Slavonian the number of German loan-words relating to house-building, house-furniture, etc., is very large, and not insignificant in Croatia and Slavonia, but beyond the Save and the Danube strikingly small. The majority of the Southern Slavs belong to the great culture-area of Central Europe. The influence of the Turks on them may have been to induce "a period of ethnographic recreation and a return to original ethnographic vivacity" (Cvijič), but in some place it has been much greater than is generally believed. Montenegro, the most patriarchal of all, has been least influenced by them.

Nehring (W.) Die russische Volksepik. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, Heft XIV, 33–50.) Treats of the Russian folk-epics, their names (*bylina* "song of the bygone"; *starinâ* "song of the past"; *pêsń* or *pêsnja*

"song," *i. e.*, of real things), collectors (Sacharov 1838, Rybnikov 1861, Hilferding 1871, Miller, 1869, etc.), heroes (Ilja or Elias, the cripple of Murom who received a giant's power; Dobrynja Nikitič, who traveled to the Tartar Khan; Michaelo Ivanovič Potok, Dunaj Ivanovič, Stavr Godinov; Aleša Popovič and Curilo Plenkovič; Solovej Budimirovič who came to Kiev from foreign lands and Djuk Stefanovič from India), atmosphere and content ("rough, irregular, without psychological background, rich in words, poor in thoughts," the heroines and heroes have no general-human qualities, exhibit no psychic personalities, only their rough, brutal, physical strength), etc. The language is very simple and little figurative. Reminiscences of well-known tale-motives occur (Joseph and Potiphar's wife, — there is indeed a "Christian-mythological stratum, — Hildebrant and Hadubrant, labors of Hercules, etc.).

Newton (W. M.) Study of the gravel drift. (Man, Lond., 1906, 83–84.) Suggests that the "black seam" represents "undissolved fragments of an old land surface which may have extended over an area of many hundreds of square miles." The enormous coloring matter in solution would account for the strains on flints, etc.

Nouvelles découvertes dans les cavernes de la province de Santander. (L'Anthropologie, Paris, 1906, XVII, 143–149, 4 fgs.) Résumé and critique of H. A. del Rio's recent monograph, *Las Pinturas y Grabados de las cavernas prehistoricas de la Provincia de Santander: Altamira, Covalanas, Hornos de la Peña, Castillo* (Santander, 1906; pp. 90). The most important of these new discoveries is the grotto of Castillo, with its many figures painted in red. Del R. ranks as successive phases of cavern art: Preponderance of animal figures, particularly bisons; decadence of animal figures, numerous geometric figures; purely symbolic graphics, disappearance of animal figures. Castillo is Magdalenian. See *Alcalde del Rio*.

Obermaier (H.) Les restes humains quaternaires dans l'Europe centrale. (Ibid., 55–80, 1 fg.) This second part treats of genuine and uncertain Quaternary human remains in Germany and Switzerland. Among the genuine are, in Germany: Taubach and Andernach; in Switzerland: Freudenthal, Kesslerloch. Lacking sufficient evidence, erroneous, or doubtful, according to O., are, in Germany: "Raüberhöhle" (near Ratisbon), Gailenreuth, Ofnet, Heppenloch, Bocksteinhöhle (near Bissingen), Hohlefels, Cannstatt, Moosbach, Mannheim, Seligenstadt, Lahr, Egisheim, Bollweiler, Tagolsheim, Steeten a. Lahn, Neandertal, Buchenloch, "Raüberhöhle" (near Letmathe), Balve, "Bilstein-Höhlen" (near Warstein), Poessneck, Rixdorf; in Switzerland: Schweizersbild. The Swiss paleolithic "stations" are all of the reindeer epoch, Solutrean (Kesslerloch) or Magdalenian (all others). The Taubach "station" is atypic of the warm Mousterian epoch; that of Andernach belongs to the cold Magdalenian.

—— Beiträge zur Kenntnis des Quartärs in den Pyrenäen. II. (A. f. Anthr., Brnschwg., 1906, N. F., V, 244–262, 6 fgs., map.) Treats of the geological, paleontological, archeological (stations of St Martory, caves of La Tourasse, Montconfort, Tarbe, Marsoulas, Gourdan, — one of the classic "stations," with rich culture-relics, — Gargas, Lorthet, Aurensan) aspects of the Quaternary in the Garonne region (between Martres and St Bertrand de Comingues), and the Neste-Adour region, between Lannemezan and Orignac.

Peixoto (R.) Tabulæ votivæ. (Portugalia, Porto, 1906, II, 187–212, 11 fgs.) Treats of numerous *tabulæ votivæ*, chiefly of the nineteenth century, in various parts of Portugal.

Piette (É.) Le chevêtre et la sémi-domestication des animaux aux temps pléistocènes. (L'Anthropologie, Paris, 1906, XVII, 27–53, 50 fgs.) This first article treats of the representations of halters in the art of the "glyptic age" — the horse-heads from Saint-Michel d'Arudy, Brassempouy, Mas d'Azil, etc., are characteristic. P. believes the halter (the bridle took its place when the bit was invented) was in use for "more than 10,000, probably more than 20,000 years."

Pradel (F.) Schlesische Volkslieder. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, Heft XIV, 94–104.) Folk-songs survive in Silesian in larger numbers than is generally believed. Dr P. cites versions of the Marlborough song, Frederick's Hussar, historical songs, songs of love, marriage, etc., märchen songs, etc., from Eckersdorf, Eisdorf, etc. Many were obtained from a woman

who had spent her childhood in Eckersdorf. The Marlborough item is a new one.

Praetorius (C. J.) The method of horse-shoeing in Palestrina. (Man, Lond., 1906, 34–35.) Describes the rather cruel method in vogue in central and southern Italy (the saying goes of the animal, "non è cristiano"). The forehead-bands of iron with teeth are instruments of torture. This cruelty to animals, the author suggests, is "probably a survival of barbaric times."

Preuss (K. T.) Der dämonische Ursprung des griechischen Dramas. (Neue Jahrb. f. d. klass. Alt., Lpzg., 1906, XVIII, II Abt., 161–193, 8 fgs.) Argues for the origin of the Greek drama from its "demonic" elements. Treats of the ancient Mexican demons of harvest and spring as helping to explain the Dionysus cult, the Dionysus cult itself, tragedy and mimics, etc. Ecstasy is only the outer garment of the Dionysus cult. In both this cult and the ancient Mexican the process of nature and *δρώμενον* correspond to each other. Analogic magic, the imitation of nature-processes to induce them, is at the bottom of all.

Regàlia (E.) Fauna della Grotta di Pertosa, Salerno. Seconda Nota. (A. p. l'Antrop., Firenze, 1906, XXXVI, 27–57, fgs.) Treats of the fauna of the upper and lower *palafittas*, and of the little grotto, compared with that of the cave of Zachito. These two caverns, Pertosa and Zachito, were inhabited by people of the same origin, and contemporaneously.

Regnault (M.) Grotte de Marsoulas. Haute-Garonne. Nouvelles fouilles, (Bull. Soc. d'Archéol., Toulouse, 1905 [1906], 282–286, 1 fg. Résumés briefly accounts of the Abbé Cau-Durban, Rivière, Cartailhac, Chauvet, etc., with descriptions of R.'s own investigations, and finds (flints, bone objects, etc.) made in 1904. The cave-paintings are of the reindeer-age.

Riedel (V.) Stone effigies of southern Russia. (Rec. of Past, Wash., 1906, V, 35–39, 3 fgs.) Author considers that these rough-hewn stone figures (almost exclusively female and less than 1000 years old), do not represent goddesses unknown to the ancient Slavs, nor are they grave-stones; they represent the substitution, due to the advent of Christianity, of a stone figure, for the living body of the wife sacrificed in heathen times at the death of the husband.

Schliz (A.) Der schnurkeramische Kulturkreis und seine Stellung zu den anderen neolithischen Kulturformen in Südwestdeutschland. (Z. f. Ethnol., Berlin, 1906, XXXVIII, 312–345, 1 pl., 12 fgs.) Treats of grave-mounds with *schnur*-pottery (Neckar, Lower Main, Heuchelberg, etc.), cremation, the population of the region, relations to *schnur*-pottery, lake-dwellers, etc., geologic substrate of neolithic settlement, craniology (5 skulls compared), primitive home and epochs of settlement.

Severo (R.) O Mercurio de Casal-Comba. Estatueta de bronze do "Museu Azuaga." (Portugalia, Porto, 1906, II, 233–241, 2 fgs., 1 pl.) Treats of a bronze statuette of Mercury discovered in 1877 at Casal-Comba (Mealhada) and now in the Azuaga Museum at Villa Nova de Gaya. It is probably a Greek work of the Roman period close to the Christian era.

Siebs (T.) Zu den schlesischen Flurnamen. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, Heft XIV, 107.) Note on etymology of place-name "die Wisliche," possibly signifying "waste place."

Smith (W. G.) Human skeleton of paleolithic age. (Man, Lond., 1906, 10–11.) Brief account of the discovery in 1886 of a human skeleton in a clay pit at Mixies-hill in the Dunstable district, at an alleged depth of 22 feet.

Stäsche (T.) Namen polnischer Herkunft aus Klein-Ellguth bei Oels. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, Heft XIV, 77–85.) Discusses origin and etymology of Polish names in the village of Klein-Ellguth—place-names (Käpse, Nifke, Glume) and family names (Gasde and Gahse, Jârzetz, Jersemann, Jökisch, Kohse, Stäsche Woitas, etc.), both those extinct and those still surviving. The village once had evidently a large Polish element.

Stasi (P. E.) Grotta funeraria a Badisco, Terra d'Otranto. (A. p. l'Antrop., Firenze, 1906, 17–25.) Brief account of a funeral grotto at Badisco and the objects there discovered (human remains, bones of domestic and some wild animals, a few flint knives, an amulet, etc.). The "Devil's Cave" at Badisco was used for burials, not as a permanent residence of man — it is not more than of neolithic age.

Steinmann (G.) Die paläolithische Renntierstation von Munzingen am Tuniberge

bei Freiburg i. B. (A. f. Anthrop., Brnschwg., 1906, N. F., V, 182–203, 53 fgs.) Describes with historical-geological introduction the paleolithic "station" of the reindeer age at Munzingen, first noticed by Ecker in 1875, and the finds there made ("hearthstones" and similar objects, numerous flint and stone tools indicating stone industry at the height of the Solutrean stage according to Hoernes, bone tools, etc.). According to S., the Munzingen "station" belongs to the late loess period (geologically) and the pure reindeer epoch (culturally), Solutré stage.

Szulczewski (A.) Polnische Märchen aus der Provinz Posen. (Mitt. d. Schles. Ges. f. Volksk., Breslau, 1905, Heft XIV, 60–69.) Gives German text of three Märchen ("Kalmuk," a Polyphemus legend; "The magic bottle"; "Rokita and the Shepherd," — *Rokita* is a Polish "devil") from Brudzyn and Rogasen in Posen.

Wright (G. F.) The Archeological Museum of Florence, Italy. (Rec. of Past, Wash., 1906, V, 59-63, 4 fgs.) Brief account of the Caroto Tarquina sarcophagus of the fourth century, B.C., "the glory of the Museum," found in 1870; the Vaso François (*ca.* VI cent. B.C.); the Chianciano bronzes (*ca.* IV cent. B.C.); and some other bronze objects (*ca.* III–VI cent. B.C.). Prof. W. holds that bronze was introduced north of the Alps by commercial intercourse.

Zaborowski (S.) La taille des chevaux chez les Germains et dans l'Europe préhistorique. (Bull. Soc. d'Anthr. de Paris, 1906, V^e^ S., VII, 6–11.) Discusses the height of horses among the Teutons and prehistoric Europeans, in connection with a recent article by Piétrement on the history of the horse. The Protoaryans, according to Z., did not use the horse for mounting, though they were acquainted with the "car" or "wagon." The cavalier was late in coming. The horse of these Protoaryans was smaller than those introduced from Asia.

—— Les Gaulois L'industrie dite de la Tène est purement gauloise. Les Bastarnes. (Ibid., 34–50.) Treats of the name and significance of *Celt* and *Gaul* (anthropologically the former is the brunet brachycephal, the latter originally blond dolichocephals), the home of the Gauls (Rhine and Upper Danube), the La Tène industry (this prehistoric culture is Gallic — from the La Tène region the metal industry passed to Scandinavia, England, etc.; the eastern Carpathians, Gaul, the Danube, the Po, have all felt the presence of the Gauls; many borrowings of Celtic words took place during the La Tène period; the central zone of Europe from the Carpathians to the Rhine was occupied by the Gauls before the Hallstatt epoch and the first appearance of iron in this region), Hallstatt culture (the inhumers were tall and dolichocephalic Gauls), the Bastarnes of the northern region of the eastern Carpathians (probably Celtic, — what is Teutonic in the Black Sea region, is post-Gothic), Protoaryans and Gauls. According to Z., "the Aryan mother-tongue arose in Central Europe." The expansion of this speech took place at the close of the neolithic age.

Zur Volkskunde der schwedischen Bauern im Mittelalter. (Globus, Brnschwg., 1906, LXXXIX, 380–384.) Based on Hildebrand's *Sverijes Medeltid*, translated by S. v. W. Treats of wooing, betrothal, marriage, family life, childbirth, christening and baptism, churching, childhood and child life (two important epochs, the second and seventh years), appreciation of the old, death, burial, etc.

AFRICA

Andrews (E. M.) Notes on the Webster ruin. (Man, Lond., 1906, 131–133.) Describes the ruin on the Webster farm in the S. Melsetter district, unique in S. Rhodesia. A. regards it as "nothing more or less than a royal tomb, the outside graves being probably those of near relations." It has greater age perhaps than any Rhodesian ruin yet reported. The large monoliths are of diorite, the small one of granite. The graves face any direction.

Ankermann (B.) L'ethnographie actuelle de l'Afrique méridionale. (Anthropos, Salzburg, 1906, I, 552–591, 3 maps.) First part of a résumé of the present ethnography of South Africa (Bantu). Treats of races and languages, different Bantu tribes, culture and civilization (economic life, dwellings and furniture, clothing and ornaments, etc.). Same article in German, published in *Archiv f. Anthrop.*, 1906, N. F., IV, 241–296, was noticed in *American Anthropologist*, 1906, N. S., VIII, 718.

—— Felsbrunnen in Turu. (Globus, Brnschwg., 1906, XC, 48–49, 2 fgs.)

Gives brief account of certain water-holes hewn in the rock, about which the present inhabitants, the Wataturu, claim to know nothing, although there is no trace of natives before them.

Balfour (H.) Flint-engraved pottery from the ruins at Khami and Dhlo Dhlo, Rhodesia. (Man, Lond., 1906, 17–19, pl.) From examination of the incised patterns from these refuse heaps and kitchen middens (with these fragments of pottery abundance of flint flakes are found), B. concludes that the marks on the clay vessels were made by using flints, both before and after firing. This view gives another explanation "for the survival or reintroduction of the use of rude flakes and tools of stone into a metal age," in Africa or elsewhere.

Beck (R.) Zum Tafelberg und Drakenstein. (Globus, Brnschwg., 1906, XC, 25–31, 42–46, 5 fgs.) Contains a few notes on the mixed population of Cape Colony — Dutch, French, Huguenots, English, Scotch, Malays, Hindus, Negroes, etc. Dr R. heard of a Malay who was seeking a white wife.

Bramly (A. J.) The Bari tribe. (Man, Lond., 1906, 101–103). Brief notes on villages, social life and activities, burial and birth customs, rainmaking (position is precarious), polygamy, adultery, ornaments, weapons, etc. The Bari were formerly "a large well-organized and warlike community possessing immense herds of cattle and cultivating broad tracts of country reaching back far from the banks of the Nile." Now they do not hunt, and war as a pastime has ceased to exist, "so the young generation has lost the habit of keen observation so marked in tribes accustomed to kill their daily food." They are no good as trackers or *shikaris*.

Duchemin (—) Tumulus de la Gambie. (Bull. Soc. d'Anthr. de Paris, 1906, Ve S., VII, 25–34, 3 fgs.) Describes the tumuli (megalithic graves) in the valley of the Gambia. with brief accounts of the investigation of two tumuli at Dialato and their contents, also another at Maka, 1903–1905. The human remains are Negritic, the pottery ordinary West African; no weapons or ornaments were found. The present inhabitants of this region (Mandingos) were probably not the makers of these megalithic tombs.

Durand (R. A.) Note on the silver pin found at Dhlo-Dhlo by Randall-MacIver. (Man, Lond., 1906, 84.) Suggests that this object with its Maltese cross is the work of one of the clever native goldsmiths of the Zambesi valley, under Christian influence.

Hamy (E. T.) Objets de l'âge de pierre trouvés aux environs de Kayes, Haut-Sénégal. (Bull. Soc. d'Anthr. de Paris, 1906, Ve S., VII, 3–4.) Extract from letter of M. Fr. de Zeltner referring to schist or porphyry stone implements, fragments of pottery, piece of stone bracelet, etc., found near Kayes in Upper Senegal.

Hobley (C. W.) Notes on the Dorobo people and other tribes. (Man, Lond., 1906, 119–120.) Information obtained from Chief Kamri, etc.: Genealogy, clans, totems, Masai invasion, invasion from south, traditions about former inhabitants of country, dwarfs, white race, etc. Circumcision is practised. The Dorobo call themselves Aggiek.

—— Kikuyu medicines. (Ibid., 81–83.) Lists and describes briefly 16 medicines, all vegetable but two, obtained from a *mundu mugo*, or medicine-man, of the Angare or Kahuno clan. A list of the 9 totemic clans (each has its own medicine-man) of the Kikuyu is also given.

Joyce (T. A.) Note on a series of Akikuyu "ndomi" in the British Museum (Ibid., 49–51, 4 fgs.) Describes 4 *ndomi*, or shoulder-shields, worn by Akikuyu youths at the *rua* dances.

Keith (A.) Were the ancient Egyptians a dual race? (Ibid., 3–5.) Dr K. argues against Thomson and MacIver's theory of two distinct races (negroid and non-negroid), the facial measurements of the negroid Egyptians, e. g., being only spuriously negroid.

Krämer (*Dr*) Anthropologische Notizen über die Bevölkerung von Sierra Leone. (Globus, Brnschwg., 1906, XC, 13–16, 4 fgs.) Gives chief head and body measurements of 18 individuals; describes physical characters and tattooing. The subjects were all criminals from the jail at Freetown, — 4 were Mendi, 6 Lokkoh, 2 Timné, 2 Fulah, 2 Kru, 2 Mandingo, testifying to the race-mixture possible here.

Mabille (A.) The Basuto of Basutoland. (J. Afric. Soc., Lond., 1906, V, 233–251, 351–376.) Treats of country (mountaineer-spirit), origin (intruded on Bushmen, called ba-Rwa; many place-names from Bushman tongue, also cave-drawing indicating their former presence), language (Basuto are linguis-

tically and physically "a link between the Kafir and Bechwana races"; the official language is se Suto), industry, agriculture, pastoral life (architecture simple, blacksmiths becoming rare, tanning skill behind that of Bechwana, every man his own basket-maker, wood carving absent, musical talent good, instruments poor; use of manure and irrigation unknown; cattle-care noblest occupation), marriage customs and taboos, sex-life, circumcision (probation-hut, or *mophato*, for boys; girls under care of matrons), war-dance and ceremonies, witchcraft and the witch-doctor (also rain-maker, lightning-conjuror, diviner, etc.), religious ideas (sacrifice, burial in cattle-enclosure in sitting posture wrapped up in skin or blanket), proverbs (only one in which *modimo*, "god," is mentioned; 26 given with English equivalents), folk tales (about Mmutlunyane, "the little hare"; Masilo and Masilonyane,—fratricidal story; Masilo and Thakane,—brother-sister love), government, chieftainship, land-tenure and law of succession, Basuto character (essentially sociable and a practical socialist) peaceful and kind-hearted, "greater liars than thieves, morality very low, divorce practically unknown, polygamy honored, brief sketch of Basuto history" (366–374). Fear of Basuto as menace to S. Africa, according to author, is greatly exaggerated. They are not dying out. They will survive by adaptation to Christianity and civilization.

Mayr (F.) The Zulu Kafirs of Natal. (Anthropos, Salzburg, 1906, I, 453–471, 7 pl., 20 fg.) Treats of physical characters and history (briefly), dwellings and and their dispositions, food (obtaining, preparation, etc.), luxuries (tobacco, hemp, beer), etc. Effect of white contact is very noticeable, the young generation often "don't even know the names of things used by their fathers and grandfathers," and every Zulu hut now shows a mixture of past and present. The name for sweet potato, *epatata*, is evidently a loan-word. Anthropophagy occurred only through food necessity. At first tobacco was snuffed only.

Milliken (A. S.) Burial customs of the Wa-Ka-virondo in the Kisumu province. (Man, Lond., 1906, 54–55.) Notes announcement of death, hut-burial, mourning, grave dance, disposition of wives.

Müller (F.) Die Religionen Togos in Einzeldarstellungen. I. Die Verehrung des höchsten Wesens (Bukú) in Atakpame. (Anthropos, Salzburg, 1906, I, 509–520, 4 pl., 5 fgs.) First part of a detailed account of the religions of Togo, German West Africa. Treats of the worship of *Bukú* (the supreme being) in Atakpame, a divinity originally perhaps the national god of the Adele and Aguti tribes, now regarded as good and kind, benevolent, etc. His name, cult, laws, and taboos, symbols, and signs are described. At pages 516–520 are given (native text, interlinear translation) three myths relating to Bukú.

de Offeio (F.) Proverbi abissini in lingua Tigray. (Ibid., 196–301, 3 fgs.) Gives, with translations, 50 proverbs from the Abyssinians about Gondar, who speak the Tigré language, relating to daily intercourse, education, religion, family life, virtue and vice, etc. The following are notable: A people without education is like food without salt. Do good, if you have to pass the night in the street. Truth is the best of all sciences.

Parkinson (J.) The legend of Oro. (Man, Lond., 1906, 103–106.) A tale of Oro, the bull-roarer, from the Yoruba of West Africa, who departed from the world offended because a woman had seen part of him. He went into the cam-wood, hence any *oro* of that substance is especially good.

—— Notes on the Efik belief in "bush soul." (Ibid., 121–122.) The Efik and Ekoi ideas as to reincarnation and marriage of people having "bush souls" of animals are briefly given. No special name is given to the animal in which the "bush soul" resides.

Passarge (S.) Berichtigung zu der Besprechung über die Buschmänner der Kalahari. (Z. f. Ethn., Berlin, 1906, XXXVIII, 411–415.) Reply to criticism of Fritsch, to which the latter rejoins, pp. 414–415.

Petrie (W. F.) The Hyksos. (Man, Lond., 1906, 113–114, 1 pl.) Brief account of Hyksos remains (camp *ante* XVIII dynasty, graves, Synan pottery, etc.) excavated at Tell el Yehudiych. This was probably the great camp of Avaris and the city mentioned by Manetho. A "continuous degradation of work" seems to characterize the Hyksos period. These Hyksos came from the open country between Syria and Babylonia, and they fought their way into Egypt, as afterward did the Mahometan Arabs.

—— The Egyptians in Sinai. An account of recent discoveries. (Harper's Mo., N. Y., 1906, CXII, 440–447, 9 fgs.) Gives account of the excavations at the temple of Serabit el Khadem, Sinai, and the remains there discovered. The Egyptian records in this region date back to 4500 B. C. (rock sculpture of King Semerkhet of First Dynasty), and the Egyptians mined turquoise here 4000–1100 B. C. The mining-record tablet dates from 2500 B. C. Here to is to be found "the oldest example of the system of Semitic worship."

Planert (W.) Eine vergleichende Grammatik der Bantusprachen. (Globus, Brnschwg., 1906, LXXXIX, 385–6.) Brief résumé and critique of C. Meinhof's *Grundzüge einer vergleichenden Grammatik der Bantusprachen* (Berlin, 1906). P. argues that we are now beyond the reconstruction ideas of Bopp and Grimm. M's etymological explanation of the origin of the class-prefixes is not satisfactory.

Routledge (W. S.) An Akikuyu image. (Man, Lond., 1906, 1–3, 1 pl.) Describes a clay ceremonial figure (referred to as "the little one" by the natives) from the Akikuyu on the river Goura, province of Kenia, British East Africa. The ceremonies of the festive occasion on which it is exhibited and made to dance are briefly noted.

Seidel (H.) Kamerun im Jahre 1905. (Globus, Brnschwg., 1906, XC, 57–60.) Contains a few notes on population, missions, education. A large Haussa colony is reported from Jabasi. The town of Duala has *ca.* 22,000 negoes.

Spiess (—) Aus den Gerichtssitzungen der Evheer Westafrikas, in alter und neuer Zeit. (Ibid., 1906, LXXXIX, 334–335.) Brief account, from data obtained from natives, of this ancient and modern judicial procedure of the Evhe (Ewe) negroes of West Africa, with explanation of technical terms involved. Certain judges have great reputations, and cases are often held so that a famous one may determine them.

Tachard (M.) Sur les antiquités et les vieilles villes de Tunisie. (Bull. Soc. Archéol., Toulouse, 1905 [1906], 276–278.) Notes on the Punic necropolis of Carthage, the Roman ruins at Aïn-Tounga, Tebessad, etc.

Volk (Das) der Tanala. (Globus, Brnschwg., 1906, LXXXIX, 358–362, 6 fgs.) Describes the Tanala, a people of southeastern Madagascar, after the account by Lieut. A. du Pecq, in the *Tour du Monde*. Physical characters, family life, judicial procedure and ordeals, religion and spirit-lore, stone-monuments (some dolmen-like), death and burial, soul-lore, shamanism, time-reckoning, material culture, etc., are briefly discussed. The Tanala use the Arabic script for magic formulæ — the signs are called *sorabe*.

Weiss (—) Land und Leute von Mpororo. (Ibid., 266–271, 325–332, 13 fgs.) First two sections of an interesting account of the Mpororo people (Waporoporo and Wahima) and country in the N. W. corner of German East-Africa. Iron-smelting is practised. Agriculture, pottery, basketry, tobacco pipes, clothing and ornament, family and sex-relations (girls as a rule virgins till marriage), physical characters, etc., are discussed. The Waporoporo are an agricultural, the Wahima a pastoral people.

Werner (H.) Anthropologische, ethnologische und ethnographische Beobachtungen über die Heikum- und Kungbuschleute nebst einem Anhang über die Sprachen dieser Buschmannstämme. (Z. f. Ethnol., Berlin, 1906, XXXVIII, 241–268, 6 fgs.) Treats of physical characters (averages of measurements of 14 men and 17 women given), senses (sight keen, hearing exceedingly keen), gestures, dances of men (described with some detail), animal and vegetable food (11 sorts of roots, etc., enumerated), clothing and ornament, amulets (four sorts), weapons, implements, utensils, fire-making, dwellings, language (pages 260–268 contain vocabularies of Heikum, Kung, and Nama, with grammatical sketches of Kung and Heikum). W. argues against the alleged Hottentot origin of these Bushmen — language is entirely different and stratopygy is not present in the women.

Witte (F.) *und* **Schmidt** (W.) Lieder und Gesänge der Ewhe-Neger, Gê-Dialekt. II. (Anthropos, Salzburg, 1906, I, 194–209.) Conclusion of article. Gives text and music, with German version, of an abusive song of Anecho, classic in type, and of a song of praise (of a man and his family) also from Anecho; also the texts with translations of three songs of Kanyi, a singer of Adyido, and of two songs of the singer Akuesihu. Interpretive and explanatory notes.

ASIA

Annandale (N.) The introduction of the blow-gun into southern India. (Man, Lond., 1906, 26.) Treats very briefly of a blow-gun ("evidently of North Bornean workmanship, with certain alterations made in India"), from Kilakarai, whither such implements are brought by the Tamils who procure them for the "Orang Bugis" in Singapore. The local name of the blow-gun, sĕng-gūtăn, is doubtless a corruption of the Malay sūmpĕtan.

Aston (W. G.) Ancestor-worship in Japan. (Ibid., 1906, 35–37.) Accord to A. the widespread belief in Japan and elsewhere that Shinto is based on ancestor worship is incorrect since "Shinto, the old native religion of Japan, had no cult of true ancestors, whether of the individual or of the race" (the funeral-service is, e. g., an innovation dating only from 1868; the institution of adoption was also unknown in ancient times). In the "ancestor worship" of the Japanese, A. "strongly suspects Chinese influence" (e. g., the influence of Hirata early in the nineteenth century).

Bab (H.) Geschlechtsleben, Geburt und Missgeburt in der asiatischen Mythologie. (Z. f. Ethnol., Berlin, 1906, XXXVIII, 269–311, 26 fgs.) Treats of the phenomena of sexual life, birth and abnormal births (particularly the pathological aspects of these) in relation to the motives and art-expression of the mythologies of Asiatic peoples Menstruation, *coitus*, "virgin birth," incest, pregnancy, premature birth, abortion, child-birth, twins, miscarriage, giant and dwarf children, partial and complete monsters, polydactly, polycephaly, "Siamese twins," cyclopes, acephaly, diseases and deformities of various sorts, are discussed. Dr B. notes that in the drawings of children (which have been compared with those of primitive peoples) no instances of polycephaly, etc., occur. The author does not know the article of Dr D. S. Lamb on "Mythical Monsters" (Amer. Anthrop., 1900, N. S., II, 277–291), hence the statement on page 273 that Prof. F. Schatz (1901) is the first author to treat of mythology from the point of view of the pathological anatomist, etc.

Banks (E. J.) The Bismya temple-(Rec. of Past, Wash., 1906, V, 227–236. 11 fgs.) Gives an account of the explorations in 1903–1904 of the Babylonian ruin-mounds of Bismya, and of temple (*ca.* 6000 B. C.) and other remains (inscriptions, bricks of Dungi, gold of Naram Sin, marble statuette, statue of David, tablets, stone vase and pottery fragments (B. dates the oldest of these *ca.* 10,000 B. C. at least)).

Bogoras (W.) Religious ideas of primitive man from Chukchee material. (Intern. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 129–135.) English text of article of which a French version was noticed in *Amer. Anthrop.*, 1905, N. S., VII, 347.

Bourlet (A.) Socialisme dans les hūa phăn, Laos, Indo-Chine. (Anthropos, Salzburg, 1906, I, 521–528.) Discusses "a sort of socialism," or rather "a species of communism strongly resembling feudalism," — each inhabitant calls on his neighbors for assistance when needed at tree-cutting, harvest-time, etc., the seed-ground is distributed according to needs, etc. Alms and beggary are unknown; hospitality encourages travel. The burdens of the common people are not so heavy as elsewhere; and the corvées paid to the chief are recouped by his protection.

Brandenburg (E.) Ueber Grotten in Phrygien. (Z. f. Ethnol., Berlin, 1906, XXXVIII, 410–411.) Abstract. Article appears in full in *Abh. d. k. bayr. Ak.*, III Kl., XXIII Bd., III Abt., 651–667. Brief notes on the nature and use of caves for residence in Phrygia. The author points out that in the development of these caves may be seen one of the several independent origins of the gable in house-architecture.

Caius (J.) Au pays des castes. Castes des pays Dravidiens. (Anthropos, Salzburg, 1906, I, 426–434.) Gives descriptive table of castes among the Tamils, Malayalams, Kanaras, Telingas, and list of castes of uncertain origin.

Easter (J.) Among the ruins of Ephesus. (Rec. of Past, Wash., 1906, V, 111–116.) Notes on ancient fortress, church of St John, temple of Diana, stadion, theater, etc.

Gerini (G. E.) On Siamese proverbs and idiomatic expressions. (J. Siam. Soc. Bangkok, 1904–05, I, 11–168.) Valuable collection, — Siamese text, literal translation, implied meaning, comparative notes, subject index, etc. Age, characteristics, etc., are discussed. The maxims of King Ruang (pp. 59–68) are given; also Lau (pp. 116–122) and Mon

(pp. 123-134) proverbs. The maxims of King Ruang (latter half of 13th century) are genuinely Siamese. Siamese proverbs are more concise and original than those of the Malays.

Gueadon (J.) La littérature khmère et le Buddhisme. II. Le coin d'un paradis buddhique. (Anthropos, Salzburg, 1906, I, 278–295, 2 pl.) Gives the Khmer text, transliteration, and translation of a poem descriptive of the Buddhist paradise from the *Ponhasa Siresa*, vol. V, p. 119.

Henderson (A. E.) The mosque of Isa Bey at Ephesus. (Rec. of Past, Wash., 1906, V, 259–265, 7 fgs.) Treats of the beautiful Seljukian mosque (said to have been built *ca.* 1340 A. D.) at Ephesus, now the small Yuruk hamlet of Ayassoulok.

Henning (G.) Die Reiseberichte über Sibirien von Herberstein bis Ides. (Mitt. d. Ver. f. Erdk. zu Leipzig, 1905 [1906], 240–394.) Pages 341–372 of this valuable monograph, which résumés the accounts of travel in Siberia from Herberstein in 1549 to Ides in 1704, contain résumés of the ethnological data (in these various accounts of Siberia up to Ides) concerning the Voguls, Ostiaks, Tunguses, Buriats, Targazins, Dours, Djutcheris, Giliaks, Yakuts, Yukagirs, Chukchee, Koriaks, Oljutors, Kamtchadales, Kurilians, etc. These old accounts contain much valuable information concerning the history, migrations, habits, customs, and institutions of the primitive peoples of Siberia, especially N. C. Witsen's *Noord en Oost Tartarye*, published in 1692 at Amsterdam.

Henson (L. L.) Researches in Palestine. (Rec. of Past, Wash., 1906, V, 39-59, 7 fgs.) Treats of recent excavations and investigations in and about Jerusalem relating to the site of the original Zion and the city of David, in the Shephelah, and particularly at Gezer (8 different periods of occupancy from pre-Semitic cave-dwellers to Christian period), which may have been at one time a western Assyrian post.

Huth (G.) Meine Reise nach Ostsibirien, nebst einer Betrachtung der ethnologischen, politischen und wirtschaftlichen Verhältnisse Sibiriens und der Mandschurei. (Mitt. d. Ver. f. Erdk. zu Leipzig, 1905 [1906], xlv-liv.) Contains notes on the Siberian peasants, the Tungus (differ in character from other Mongolians; are genial, careless, honest) and their social life, etc. The Manchurians proper number only some 600,000.

Jochelson (W.) Ueber asiatische und amerikanische Elemente in den Mythen der Koriaken. (Intern. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 119–127.) Practically the same data as in J.'s article on "The Mythology of the Koryak," in *Amer. Anthrop.*, 1904, N. S., VI, 413-425.

Lehmann (E.) Durch Sophene und Kataonien. (Globus, Brnschwg., 1906, XC, 37–42, 53–57, 9 fgs., map.) Treats of the passage over the Euphrates at Kymyrchan, a place of importance in various epochs (near here is an inscription of Sardur III), the inscription of Corbulo at Keserik, the site of Arsamosata (perhaps the modern Samosad), the plain of Kalon-Pedion, Anzit (the Inziti of Assyrian inscription), a Roman military road, etc.

Luchenbill (D. D.) A comprehensive account of the excavations in Ashur from Sept. 18, 1903, to the end of February, 1905. (Rec. of Past, Wash., 1906, V, 15–24, 7 fgs.) Translated and condensed from the Reports of the German Oriental Society. Treats of fortifications, temples, palaces and other buildings, graves and sarcophagi.

—— Documents from the temple archives of Nippur. (Ibid., 213–224, 6 fgs.) Résumés some of the data in Rev. A. T. Clay's recent (1906) work with this title.

Maurer (F.) Israelitisches Asylrecht. (Globus, Brnschwg., 1906, XC, 24–25.) Brief discussion of the Israelitish "right of asylum" as indicated in the old Testament. The "right of asylum" in the sanctuary of Jahveh at Jerusalem is "a genuine Israelitish legal institution." Dr M. thinks that, even if the institution of the "right of asylum" was taken over from the Canaanitish aborigines, its internal development was quite independent.

Morin (P.) Notes Laotiennes. Ba Si ou Su Kuan. (J. Siam Soc., Bankok, 1904-5, I, 169–175.) Describes the *ba si* or *su kuan* (the terms are nearly synonymous), a festival or ceremonial celebrated in honor of the visit of a mandarin of high rank, an important official, etc. It is a sort of *fête* for the household gods.

Naville (E.) *and* **Hall** (H. R.) Excavations at Deir el-Bahari, 1905-6. (Man,

Lond., 1906, 97–101, 1 pl., 5 fgs.) Describes excavation and clearance of central platform of a XI dynasty temple discovered in 1903, the southern court of the temple, the beginnings of a temple of the XVIII dynasty, a shrine of Thotmes III, within which were found an image of Hathor in the form of a cow, etc.

Pápay (J.) Az osztjákok földjén. (Földr. Közl., Budapest, 1906, XXXIV, 77–96, 9 fgs.) First part of account of visit in 1898 among North Ostiaks of Tobolsk, known in the twelfth century to the Novgorodians as *Jugri*. Boat-songs, houses, domestic life, shamanism, animal-sacrifice, "temple and idols," song and dance, etc., are briefly described.

Stenz (G. M.) Der Bauer in Schantung. (Anthropos, Salzburg, 1906, I, 435–452.) Treats of the condition, etc., of the Chinese peasantry (the peasantry ranks second in the four chief classes, following the *literati*) in the source of Shan-tung. Landed property, taxation, laborers, slaves, dwellings, etc., are considered.

Sternberg (L.) Bemerkungen über Beziehungen zwischen der Morphologie der giljakischen und americanischen Sprachen. (Intern. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 137–140.) Points out some 10 peculiarities of grammar and morphology in which the Giliak language resembles the American Indian rather than the Ural-Altaic tongues (use of prefixes in word-formation, pleonastic pronouns or numerals with nouns, and similar auxiliaries with verbs, conjugation by adverbial postpositions, easy change of adjectives and nouns to verbs, special varieties of verbs, approximation to incorporation, classificatory cardinal numbers).

Teleki (P.) Japán szerepe Amerika fölfedezésében. (Földr. Közl., Budapest, 1906, XXXIV, 1–13, 6 fgs.) Treats of Japan's rôle in the discovery of America. Marco Polo spread abroad the fame of the golden realm of Zipangu (Japan), which figured on pre-Columbian maps. Later Cipangu and Hispaniola were confused. The search of Zipangu led to the discovery of America.

Wegener (G.) Tibet und die englische Expedition. (Mitt. d. Ver. f. Erdk. zu Leipzig, 1905 [1906], xiii–xvii.) Résumé of address. For details see the author's recent volume, *Tibet und die Englische Expedition* (Halle, 1904). Dr W. traveled in 1898 in the Sikkim-Himalaya country. There are two physical types of Tibetans, one darker and rather ugly (mass of common people), the other lighter and nobler-featured.

Wright (G. F.) Inscriptions at Dog river, Syria. (Rec. of Past, Wash., 1906, V, 3–5, 1 fg.) Brief account of situation and surroundings of some ancient inscriptions (Egyptian, Assyrian, etc.) on the precipice overlooking the mouth of the Nahr-el-Kelb, a region where there is much evidence of the former presence of prehistoric man.

INDONESIA, AUSTRALASIA, POLYNESIA

v. Bauer (V.) Eine Reise auf die Insel Sawaii, Samoa. (Mitt. d. k. k. Geogr. Ges. in Wien, 1906, XLIX, 566–585.) Describes visit made in 1903. Notes on Apia, Salealua, an excursion through the bush to Samata (account of the *taupo* or village maiden, who acts officially as leader in ceremonies, dances, etc.; to the German *Prosit!* corresponds Samoan *Manuia!*), the *siva* dance, pantomimes, the Wallis islanders and their oar-dance, physical characters (children are pretty and quiet), fishing and sea-food, family life, etc. The Samoans are in a sense "civilized." Baron v. B. proposes a sort of "ethnological reservation" for them.

v. Bülow (W.) Die Bemühungen um die Feststellung der Urheimat der Polynesier. (Globus, Brnschwg, 1906, XC, 61–66.) Discusses the various theories as to the primitive home of the Polynesians, the evidence therefor, etc. Ethnological and mythological data seem to afford more proof than anthropological. Samoa was already peopled by Polynesians *ca.* 450 A.D. Savaii was peopled from the west (the legend is given in Samoan and German).

—— Die vulkanische Tätigkeit auf Savaii und deren Einwirkung auf die wirtschaftlichen Verhältnisse der Eingeborenen. (Ibid., 21–24, 5 fgs., map.) Discusses the influence of volcanic activity in the island of Savaii (Samoa) upon the native settlements, etc., the outbreak of 1905 in particular, — many villages have had to seek new sites. The Samoans are wont to mock at the injuries of nature, and tease those driven away from their homes by lava-flow.

Duckworth (W. H. L.) Note on a cranium found in a cave in the Baram

district, Sarawak, Borneo. (Man, Lond., 1906, 49, 1 pl.) Description with chief measurements of a remarkable artificially deformed skull (index 101.2), "resembling many which occur in collections from British Columbia, Peru, or the caves of Jamaica."

Edge-Partington (J.) Solomon Island basket. (Ibid., 73–74, 2 figs.) Describes a large coiled-reed basket from the neighborhood of Bougainville str., now in the author's possession.

Edge-Partington (T. W.) Note on the food bowl from Rubiana, New Guinea. (Ibid., 121.) Adds information received from King Ingova, at whose coronation feast this trough was used. The eyes are not those of the frigate-bird, but of "the devil."

—— Decorated shields from the Solomon islands. (Ibid., 129–130, 1 pl., 1 fg.) Describes an ornamented rectangular bark shield in the British Museum and another of the same type in the Pitt-Rivers Museum, Oxford. See *von Hügel.*

Gray (H. St G.) A Maori canoe-baler. (Ibid., 10, 1 fg.) Note on a genuine totara-wood baler (now in the Taunton Castle Museum) of which the actual history is known. The decorated portion represents a human head. At page 24 some comments are made by Mr J. Edge-Partington, who thinks the object possibly modern and even the handiwork of a European.

v. Hügel (A.) Decorated shields from the Solomon islands. (Ibid. 21, 1 pl.) Describes a pair of beautiful shell-inlaid shields, now belonging to the University of Cambridge. The decoration is a highly conventionalized human figure. In form and material they correspond to the wicker-work shields of the island of Florida.

Huonder (A.) Die Verdienste des philippinischen Mönche um die Wissenschaft. (Anthropos, Salzburg, 1906, 1, 529–551.) Sketches the scientific labors of the monks in the Philippines during the last 300 years in history (Delgado, Martinez de Zuñiga, Carrillo, Castaño, Serrano, del Rio, Combes, de Loyola, de S. Augustin, Chirino, J. de la Concepción, etc.), geography and ethnology (Heras, Calayag y Clemente, Combes, de S. Augustin, de la Concepción, Mozo, Velarde, de Zuñiga, Ferrando, Buenaventura Campa, Malumbres, Urios, Sanchez, Llovera, Peruga, Gisbert, Vallée, Nebot, de Plasencia, Algue, etc.), natural history and meteorology (Torrubia, Blanco, Delgado, Klein, Kamel, Llanos, etc.). Besides this the monks supported and encouraged investigators and travelers (e. g. Jagor, Montano, Marche, Retana, Blumentritt).

Joyce (T. A.) Note on a very unusual form of "tiki" from New Zealand. (Man, Lond., 1906, 81, 1 pl.) Describes a jade tiki of unusual type, carved on both sides.

Lang (A.) Animal names of Australian "class" divisions. (Ibid., 67–68.) Author seeks to show that the evidence for the animal names of such divisions is not "meagre," as Prof. Spencer has recently declared. Eaglehawk and Crow, e. g., occur over a vast area. Many moieties and "classes" do bear animal names.

—— The Euahlayi and missionary influence. (Ibid., 105.) Author supports Mrs Parker's view in *The Euahlayi Tribe*, that these aborigines did not get their religious ideas from white missionaries. See also p. 122.

Meier (J.) Berichtigungen zu Dr. Schnee's Mitteilungen über die Sprache der Moánus, Admiralitäts-Inseln. (Anthropos, Salzburg, 1906, 1, 210–228, 472–482.) Detailed criticism of the data in Dr Schnee's *Beitrag zur Kenntnis der Sprachen im Bismarck-Archipel*, published in the "Mitt. d. Sem. f. orient. Sprachen" (Berlin, 1901, Jahrg. IV, Abt. III.), concerning the phonetics, grammar, vocabulary, etc., of the language of the Moánus.

Nyuak (L.) Religious rites and ceremonies of the Iban or Dyaks of Sarawak. (Ibid., 165–184, 403–425, 2 pl., 8 fgs.) Continuation and conclusion of article. Treats of the soul, customs of childbirth, marriage, death and burial, the *manang* or medicine-man (rites of initiation), customs connected with rice-farming (omens, charms, sacrifice, *memali umai*, *muja tanah* ceremonies), with building of a village, the *tua* or guardian spirit, custom of *nampok* or spirit-seeking, the Iban on the war-path, customs concerning trophies (human skulls), omens and auguries, taboos connected with the house, etc., *pang kong tiang* (invoking protection of spirits on new house or village), charms and spells, *iban nyukul* (appeasing spirit of sickness and epidemic), sacrificial feasts, *gawai kalingkang* (feast of altars), *gawai kenyalang* (feast of the hornbill) — the last "the

greatest of all feasts." Dyak "protection" against and "use" of spirits are well exemplified here.

Roth (H. L.) Tonga Islanders's skin-marking. (Man, Lond., 1906, 6–9, 2 fgs.) Cites evidence from various authorities as tattooing and "keloids" at Tonga. R. is inclined to think that Basil Thomson's theory of "decency" as the explanation of the origin of tattoo is about the best. Keloiding and scarring were sometimes of "medical" origin.

Schlaginhaufen (O.) Ueber eine Schädelserie von den Marianen. (Jhrb. 1905 d. St. Gall. Naturw. Ges., 1906, 454–508, 19 fgs., tables, bibl.) Gives details of description and measurements of 14 more or less complete skulls, several fragments, and 21 lower jaws from Saipan, the second-largest island of the Carolines. The cephalic indexes range from 71.8 to 84.7, the capacities from 1300 to 1665 ccm. Certain peculiarities are connected with an excessive development of the musculature. A primitive character is the predominance of the frontal over the sagittal arch.

Seligmann (C. G.) Note on a trephined skull from New Britain. (Man, Lond., 1906, 37–38, 1 fg.) Describes skull from the bush near Blanche bay with extra-large hole in right occipital region, due to *ante-mortem* trephining.

—— Notes on the Tugere tribe, Netherlands New Guinea. (Ibid., 65–67, 1 pl., 2 fgs.) Comments on photographs of three Merauke men and four women made by Capt. Pim and of a number of spears from the same region. The "Tugere raiders" of Sir W. MacGregor and the Merauke are the same people. The Toro canoes are dug-outs without outriggers, propelled by poles. Pig's testes are worn as ornaments by the men.

Woodford (C. M.) Notes on Leueneuwa, or Lord Howe's Group. (Ibid., 133–135, 2 fgs.) Brief notes on canoes, weaving, burial and graves, turtles (kept for years in pits; one or two plates of shell removed at a time, — they eventually grow again), tattooing, castaways, language (list of 60 words and numerals). The natives are "Polynesians with a strong Micronesian admixture."

AMERICA

Barranca (J. S.) La raiz *kam* y sus derivados en el Kichua, como medio de investigación de la historia antigua del Perú. (Rev. Hist., Lima, 1906, 1, 60–64.) The author seeks to trace the ramifications of the Quechua root "*kam* (to roar, make a noise)" in a series of words including *Kamcha* (toasted maize), *Pacha-Kámak*, *Konópas* (Lares), *Kuntinamarca*, *Cuntisuyu*, *Chibchakun*, etc. It seems to be all forced etymology, of no real significance.

Berlin (A. F.) Early smoking pipes of the North American aborigines. (Proc. & Coll. Wyo Hist. & Geol. Soc., Wilkes-Barré, Pa., 1905, IX, 107–136, 5 pl.) Treats of use of tobacco and various types and varieties of pipes. Notes scarcity of pipes on Atlantic coast. See review of volume in this issue of *American Anthropologist*.

Barbour (E. H.) Evidence of man in the loess of Nebraska. (Science, N. Y., 1907, 110–112.) Treats of physiographical features of locality, method of exploration, age of supposed loess man.

—— Prehistoric man in Nebraska. Putnam's Mo., N. Y., 1907, 1, 413–415, 502–503, 3 fgs.) Compares the remains of the "Nebraska man" with the Neandertal man, the *Pithecanthropus*, etc. Prof. B., who, seemingly, believes the *Pithecanthropus* to be "a speechless, fossil man of Java, just halfway between man and the apes, and the lowest representative of the human kind," thinks the "Nebraska loess man" stands about as far above the Neandertal man as the latter does above the *Pithecanthropus*. He also attributes the mound to the race to which the "Nebraska man" belonged. The age of these remains is ca. 10-20,000 years.

—— *and* **Ward** (H. B.) Preliminary report on the primitive man of Nebraska. (Neb. Geol Surv., Lincoln, 1906, II, 319-327, 4 fgs.) Treats of the five skulls (details of one) and other human bones discovered in October, 1906, in a layer of "packed clay" or loess, at a depth of 4 or 5 feet in a burial mound on a hill near Florence, Neb. Above this layer 3 other skulls and many bones of "a more advanced race" were found. The skull described (ceph. index 79) and some of the bones are said to indicate a very primitive type, and it is "possible that this may prove to be the earliest type of man known as yet in America." The bones of the lower layer seem synchronous with the loess.

Blackiston (A. H.) Cliff ruins of Cave valley, northern Mexico. (Rec. o1

Past, Wash., 1906, v, 5–11, 8 fgs.) Treats chiefly of Olla cave, its pictographs, etc. Many of the caves in this valley of the Sierras Madres of Chihuahua have been used for residences, or have sheltered mummies, or both. Burials were made beneath the floor in some cases, as remains found indicate.

—— Casas Grandian outposts. (Ibid., 142–147, 9 fgs.) Describes chiefly an "outpost" near the headwaters of the Piedras Verdes river, thought to be pre-Spanish and of great age.

Boas (F.) Der Einfluss der sozialen Gliederung der Kwakiutl auf deren Kultur. (Intern. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 141–148.) Describes the change, under the influence of the culture of the tribes of northern British Columbia (with genuine totems, "coats of arms," maternal succession, etc.) of the social life of the Kwakiutl Indians from a series of loose village communities without strict distinction of the individual's relation to paternal or maternal family, to a marked clan organization with a system of succession showing peculiar transitions between paternal and maternal forms. This change has affected all aspects of Kwakiutl culture, even shamanism, music, song, mythology. We have here an excellent example of the imposition by new developments of new forms and significations upon older customs and institutions.

Bolton (H. E.) The old Stone Fort at Nacogdoches. (Quar. Texas State Hist. Ass., Austin, 1906, IX, 283–285.) This building is traditionally credited to Gil Yarbo, who occupied the site of old mission Nacogdoches, after it had been deserted by the Spaniards about six years (after 1779), but B. thinks it certainly was not built before Yarbo's time.

de Charency (H.) Sur les idiômes de la famille Chichimèque. (Intern. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 159–191.) Comparative study (nomenclature, phonetics, grammar, numerals, vocabulary of *ca.* 190 words) of the Otomi, Mazahua, Tepehua de Huayacocotla, Pirinda (Matlatzinca) and S. Serrano dialects of the "Chichimecan" (i. e., Otomian linguistic stock. The Tepehua of Huayacocotla seems to be only an Otomi dialect. The Mazahua is not so close and the Pirinda is considerably more distant.

Currier (C. W.) Indian languages of the United States. (Ibid., 149–157.) Enumerates, with brief comments, the chief linguistic stocks. It is not quite accurate, however, to say that "the Kitunahan family is principally represented in Montana." Nor are the Pujunan and Shastan families "extinct." The author argues for a special monograph of each Indian tongue.

De Jonghe (E.) Thévet, Mexicaniste. (Ibid., 223–240.) Compares the Mexican section of Thévet's *Cosmographie* (1575) with a MS. of Thévet in the National Library at Paris. The conclusion reached is that for the most part his data are derived from an unpublished MS. of Olmos, the somewhat modified translation of which he inserted in the *Cosmographie.*

—— Voyage du Dr Koch dans les bassins du rio Negro et du rio Yapurá 1903–1905. (J. Soc. d. Amér. Paris, 1906, N. S., III, 134–136, 1 pl.) Sketches the results of Koch's recent travels among the Indians of the Negro and Yapurá country, including some who had not yet come into contact with white men. Seven or more distinctive linguistic stocks are represented in this region.

Diguet (L.) Contribution á l'étude géographique du Mexique précolombien. Le Miztecapan. (Ibid., 15-43, map.) Treats of the geography of pre-Columbian Mixtecapan (upper, lower, coastal) toponomy (Nahuatl and Mixtec placenames are given), orography and hydrography, political and other divisions, language, culture, archeology. The Mixtecs were skilled in metal working, the use of precious stones, etc. ; their pottery was remarkable and they were famed for the production of cochineal. Among their material remains are the tumuli known as *mogotes.*

Eaton (Harriet P.) Survivances païennes chez les Ojibways. (Ibid., 138–139.) Note on the ideas concerning Manabush prevalent among the Christian Ojibwa of the islands of Georgian bay (Ontario). This culture-hero of the Algonkins is practically identified with the Christ of the whites.

Evans (O. H.) Notes on the stone age in northern Chile, with special reference to Taltal. (Man, Lond., 1906, 19–24.) Treats of shell-heaps and contents (food refuse and implements of a race of hunters and fishers), "hammer-stones," harpoons and fish-spears, arrow and lance heads, pottery (no trace of *incised* ornamentation) and decoration, "rock shelter," rock-paintings (rough, in red

ocher), grave and contents (pieces of pottery, human remains, bone harpoons, bead-necklace, etc.). The stone age culture is remarkably uniform. The prehistoric Chileans of the desert coast lived in a "backwater" of culture.

Flower (F. A.) The Pillager Indians. (Rec. of Past, Wash., 1906, v, 99–103, 5 fgs.) Brief account of the Pillager Indians of the islands in Burnside lake, Minnesota, the pagan remnants of an Algonquian tribe, whose fellows were removed to Leech lake by the Government. On Flower island "has been for generations the seat of the Pillager kings." The "temple" and ceremonies still carried out are described. Copper and flint spear and arrow heads are found on the islands – the pottery hardly all of local make.

Frič (E.) Note on the Mask-dances of the Camacoco. (Man, Lond., 1906, 116–119.) Describes the "wild" and "tame" *Digičibi* or spirit-dances of the Chamacoco (the only people from the Paraguay to the Cerro Paressi who have mask-dances), held "for the exaltation of the male sex," who alone see the spirits face to face (women are excluded), "whenever an important question is to be decided." They differ from the dances observed by Koch on the Caupes, the latter being all "death dances."

—— Notes on the grave-posts of the Kadiuéo. (Man, Lond., 1906, 71–72, 6 fgs.) Discusses briefly the so-called "grave-posts" of the Kadiuéo (now no longer to be found in the villages ("the owners have all died and the posts been turned into grave-posts in the adjacent cemeteries"). Certain miniature posts are thought by F. to be the "souls" of the grave-posts, just as the Kadiuéo represent "souls" of mortars, etc. These grave-posts are generally believed to be, as Boggiani held, "ownership marks."

Gates (H.) Green Lake and its mounds. (Rec. of Past, Wash., 1906, v, 271–281, 12 fgs.) Gives results of author's excavations of Green Lake mounds, Minnesota; describes remains (stone weapons, pottery fragments, human skull, etc.) found.

Gifford (J.) The Florida keys. (Nat. Geogr. Mag. Wash., 1906, XVII, 5–16, 15 fgs.) Contains a few notes on the natives ("Conches"). One of the illustrations represents Seminole Indians in their dug-outs.

Gilder (R. F.) A primitive human type in America. The finding of the "Nebraska Man." (Putnam's Mo., N. Y., 1907, I, 407–409, 2 fgs.) Brief account by the discoverer of the circumstances of the finding of human remains of a primitive type in a burial mound in Nebraska, in October, 1906, and a subsequent intrusive burial of skeletons belonging to a higher race. The implements found in the lower level were of the crudest sort, those of the higher level showing considerable skill in handiwork. See *Barbour* (*E. H.*), *Osborn* (*H. F.*), *Ward* (*H. B.*)

Hamilton (J. C.) Stellar legends of American Indians. (Trans. R. Astron. Soc. Can. 1905, Toronto, 1906, 47–50.) Abstract of one chapter of forthcoming book on *The Pleiades*. Refers to legends of Blackfeet, Haida, Cree-Ojibwa, Wyandot, etc. According to H., "it was in South America that the cult of the Pleiades was most highly developed."

Hamy (E. T.) Note sur une statuette mexicaine en wernerite représentant la déesse Ixcuina. (J. Soc. d. Amér. de Paris, N. S., III, 1906, 1–5, 1 pl.) Describes a wernerite figure of the Aztec goddess Ixcuina (she of four faces) belonging to the Ribemont-Dessaigne collection. It represents a woman in childbirth.

Herrmann (R.) Mound builders of the Mississippi valley. (Rec. of Past, Wash., 1906, v, 236–239, 4 fgs.) Gives brief account of exhumation of skeleton of the Muskwaki chief Peosta (buried over 90 years) in digging for the foundation of the Dubuque monument, and of objects found. Pottery, pipes and other relics from the author's collection are illustrated. The author thinks that "Oriental influence among the Indians, along the Mississippi and Ohio valleys, is everywhere traceable." A "camel-head" pipe in his possession "strengthens this opinion."

Hill (C. F.) Roman Catholic Indian relics in the possession of the Wyoming Historical and Geological Society. (Proc. & Coll. Wyo. Hist. and Geol. Soc., Wilkes-Barré, Pa., 1905, IX, 171–174, 1 pl.) Describes leaden image of Virgin Mary (with two plaster molds) and brass cross, from the Wyoming valley and probably obtained by Indians through the French in the eighteenth

century. See review of volume in this issue of the *American Anthropologist.*

Hough (W.) Sacred springs in the Southwest U. S. (Rec. of Past, Wash., 1906, V, 163–169, 4 fgs.) Treats of the sacred springs (*e. g.*, Canelba, Kenalabah, etc.) of the Pueblo Indians of Arizona and New Mexico, the offerings, ceremonies, fetishes, etc., connected therewith. One of the causes of friction between the Hopi and the Government was the profaning of these springs by the erection of schools, wash-houses, etc., near them. Springs play an important rôle in the origin myths of the Zuñi. Sacred springs are water-altars.

Humbert (J.) La plus ancienne ville du continent américain, Cumaná de Vénézuéla. Ses origines — son histoire — son état actuel. (J. Soc. d. Amér. de Paris, 1906, N. S., III, 45-51.) Brief account of the origin, history, and present condition of Cumaná in Venezuela, founded as the fortress of Nueva Cordoba in 1521.

Jannasch (*Dr*) Land und Leute von Rio Grande do Sul. (Mitt. d. Ver. f. Erdk. zu Leipzig, 1905 [1906], xxiv–xxx.) Contains notes on cultivated plants, domestic animals, population, etc. Cattle, sheep, horses, and swine do not thrive as well as in Argentina. The Teuto-Brazilians number some 250,000, the Luso-Brazilians forming the mass of the inhabitants; there are also some 100,000 Italians and 20–25,000 Poles. The descendants of the Portuguese have intermingled with Indians and negroes. The *caboclos*, or Portuguese-Indian *métis*, famed for personal beauty and enjoying excellent reputation for fidelity, are numerous in the west and northwest sections. The German colonists here seek to preserve their *Deutschtum.*

Krone (R.) Die Guarany-Indianer des Aldeamento do Rio Itariri im Staate von São Paulo in Brasilien. (Mitt. d. Anthr. Ges. in Wien, 1906, XXXVI, 130–143, 6 pl., 1 fg.) Gives details of anthropometric measurements (compared with Ehrenreich's) of 6 male and 3 female Guarani Indians of the Rio Itariri in the state of S. Paulo, Brazil, observed by K. in 1903,—also of 2 male and 2 female *métis* (the total number of real Indians in the settlements is now only 79, and but 10 speak the Guarani variety of the *lingua geral*, all others Brazilian Portuguese). In another generation not a pure Guarani will be left here. The long arms of the Guarani are probably due to canoe life.

Lehmann (W.) Die mexikanische Grünsteinfigur des Musée Guimet in Paris. (Globus, Brnschwg., 1906, XC, 60–61, 5 fgs.) Brief account of a green-stone figure of Tezcatlipoca now in the Musée Guimet in Paris.

—— Sur un document céramique péruvien relatif à la lèpre précolombienne. (J. Soc. d. Amér. de Paris, 1906, N. S., III, 136–138, 1 pl.) Treats of the delineation of a human face on a Peruvian terra-cotta vase from Mocha, in the province of Trujillo, as proving the existence in pre-Columbian times of leprosy (*lepra tuberosa*).

Lejeal (L.) Le Congrès de Stuttgart. Ethnographie moderne et questions précolombiennes. (Ibid., 123–134.) Critical résumés of the papers read at the Stuttgart Congress of Americanists.

—— Premières relations officielles du Mexique espagnol avec le Japon. (Ibid., 146–149.) Résumés the facts in M. Lera's *Primeras Relaciones officiales entre el Japón y España tocantes á Mexico* (Tokio, 1905).

—— Les Memoriales de Fray Toribio "Motolinia." (Intern. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 193-221.) Compares Motolinia's *Historia de los Indios* (written 1536–1541) with his *Memoriales* published from the MS. by Pimentel in 1903. The latter is probably a first revision of the former.

León (N.) Der Haupttempel Tépari Yácata der vorhispanischen Tarasken während der Epoche der Eroberung. (Ibid., 309–319, 11 fgs., 4 pl.) Treats of the legendary history of the Tarascans and their coming to Patzcuaro, their sacred city), the subsequent erection of their temple, and the establishment after the conquest of Christian churches and other buildings on the same site. The chief authority used is Antonio de Mendoza's *Relación de los indios de Mechuacan.*

Mason (O. T.) Lefthandedness. (Science, N. Y., 1906, N. S., XXIV, 560.) Asks for evidence of lefthandedness among primitive peoples. Few savage implements are reliable as proof. The throwing-stick and woman's skin-dresser of the Eskimo are one-handed and thus reliable. U. S. National Museum possesses but two left-handed throwing-sticks (both from same locality) and no left-handed woman's implement.

Morice (A. G.) The great Déné race. (Anthropos, Salzburg, 1906, I, 229–277, 483–508, 14 pl.) First two sections (the whole is to appear later in book form) of an encyclopedic account of the Indians whom Powell classed as the Athapascan stock, to which designation Father M. strenuously objects. The general topics are: Name of the Dénés and their habitat in the north (improper names of the stock, real name, habitat as represented by various maps, Powell's map, discoverers and authors on the question, real boundaries, geographical features, climate), distribution and population of the northern Dénés (Loucheux and their name, habitat, etc.); subarctic Dénés; Athabaskans or eastern Dénés; intermediate Dénés including Nahané; western Dénés including carriers; southern Dénés (names, Apaches, Navahos, Pacific Dénés including Hupa, migrations, etc.) At pages 506–508 is given a list of Déné tribes, from which it appears that the members of this stock now number 53,687 souls, of which 19,390 belong to the northern and 34,297 to the southern division. The most populous tribe are the Navahos, the least populous the Dénés of Grande Ronde reservation, Oregon, who total but 134. This valuable monograph, with the excellent illustrations, adds much to our knowledge of this important Indian stock.

—— The Canadian Dénés. (Ann. Arch. Rep. 1905, Toronto, 1906, 187–219.) This longest of the contributions to the conspectus of Canadian ethnology compiled for the Quebec meeting of Americanists is a good résumé of facts concerning these important tribes, their distribution and population, physical characters, clothing and ornament (tattooing of late origin with many tribes), mental faculties (great divergences tell of deep influence of environment), morality, receptiveness (propensity for borrowing from foreigners great), death and burial (influence of Carriers noted), social organization (eastern Dénés nomads, western semi-sedentary, — Father M. considers mother-right of secondary nature and not primal), totems (gentile, honorific, and personal), spirits, shamanism ("conjuring," of seven kinds, chief features), potlatch, dances (rude and unartistic), gambling, work and activities, food, position of woman, etc. This monograph should be read in connection with Father M's. preceding monograph on the Dénés now appearing in *Anthropos*.

—— John McLean and Fr. Morice's "History of the Northern Interior of British Columbia." (Ibid., 65–68.) Replies to Mr D. Boyle's defense of McLean's religious attitude. (See *American Anthropologist*, 1906, N. S., VIII, 727.) Cites evidence from McLean's work.

Nordenskiöld (E.) Der Doppeladler als Ornament auf Aymarageweben. (Globus, Brnschwg., 1906, LXXXIX, 341–347, 7 fgs.) Treats of the double-eagle as ornamental motive in Aymara textiles, etc. (shawls, ponchos, caps, belts, ribbons, saddle-bags, coca-purses). The author believes that the double-eagle as an ornamental motive is of comparatively recent origin with the Aymara, has in fact been borrowed by them from the whites with whom they have been in contact for 350 years. Gold coins with double eagles (used in Bolivia and Peru at the end of the eighteenth century) may have been the basis of this ornament now so common in Aymara-land.

—— Einige Beiträge zur Kenntnis der Südamerikanischen Tongefässe und ihrer Herstellung. (Kgl. svenska Vetskpsak. Hdlgr., Upsala, 1906, XLI, repr., pp. 1–22, 20 fgs.) Treats of South American (Bolivia-Peru frontier, central Andean region toward Madre de Dios and Gran Chaco explored by author 1901–2, 1904–5) clay vessels, — localities where obtained, trade in such articles, sex-division of labor (among Quechua men are also potters), preparation of clay, forms of vessels and their making, smoothing, ornamentation, firing, use of various forms of clay vessels, spouts (due to European influence), ears (not present in most primitive sorts), "killing" clay vessels at funerals, etc. The interesting facts here recorded relate, on the one hand, to such primitive peoples as the Atsuahuaca and Yamaica, etc., and on the other, to the Quechua and Aymara. The only Indians of this region without pottery visited by N. are the Tambopata-Guarayo, who, however, do use sections of bamboo to roast their food in; that they do not know how to make pottery seems improbable.

Osborn (H. F.) Discovery of a supposed primitive race of men in Nebraska. (Century, N. Y., 1907, LXXIII, 371–375, fgs.) Compares the lower level "Nebraska man's" skull with the Neandertal and other primitive European

types and discusses briefly three "links in the chain of human ancestry" (the *Pithecanthropus*, not quite in the line of ancestry, the Neandertal man, early neolithic man of Engis, Egisheim, etc.). Prof. O. thinks the "Nebraska man" is of a more recent type by far than the Neandertal man, even more recent perhaps than the early neolithic man of Europe. This discovery increases the probability of the early advent of man in America (the paleolithic hunter, *e. g.*).

Polo (J. T.) Un Quechuista. (Rev. Hist., Lima, 1906, I, 24–38.) Gives account of the life, labors and writings of Francisco de Avila (1573–1647), a famous "extirpator of idolatry among the Indians." His *Tratado y relación de los errores*, etc. (1608) was translated and published by Markham in 1872.

Preuss (K. T.) Weiteres über die religiösen Gebräuche der Coraindianer, insbesondere über die Phallophoren des Osterfestes. (Globus, Brnschwg., 1906, XC, 165–169, 4 fgs.) Describes the "Moros," "Danzantes," "Maromeros," religious music, dances, etc., of the Cora Indians, as observed by him in the town of Jesus Maria in the early part of 1906; particularly the phallophors of the Easter festival. The Cora ceremonies represent ancient Mexican religious ideas and the Sierra tribes are now important sources for the elucidation of the religion and mythology of Old Mexico. Dr P. collected 67 *mitote* songs, many songs relating to the wine and puberty festivals, and numerous myths. The added Christian elements are also of interest.

Puccioni (N.) Gli Indiani di Buffalo Bill. (A. p. l'Antrop., Firenze, 1906, XXXVI, 85–88, 1 pl.) Gives anthropometric data (stature, head-measurements, etc.) and description of four members (Sioux) of Buffalo Bill's Indian troupe, obtained while they were in Florence, Italy. The average stature is 1811 mm., the cephalic index 83.3.

Rivet (—) Le christianisme et les Indiens de la République de l'Equateur. (L'Anthropologie, Paris, 1906, XVII, 81–101, 2 pl., 9 fgs.) Treats of the "fusion" of paganism and Catholicism in Equador, — religion is the only field in which Indians and Spaniards have been able to come into friendly contact with each other. The dance of the *Fête-Dieu* at Latacunga (now figured on a picture post-card), the *danzantes* of Azury, etc.; the "day of the dead" in Carchi and at Pasa, Azuay, etc. The "Holy Friday" procession at Tulcan, with its *turbantes* and *alma santa*, its *penitentes*, etc. Relics of ancient Peruvian practices abound. Interesting are the "funeral cakes and other sacrificial or semi-sacrificial objects. Chimborazo and Tunguragua are male and female deities respectively, and other mountains have also their personalities. During eclipses of the moon the natives make "un tapage infernal." In Cañar the rainbow is feared as the producer of a serious disease, *cuychijapischa* ("taken by the rainbow"). A certain night-demon is called *urcuyuya*, "master of the mountains." In the cavern of Curitaqui lives Mamahuaca to whom the sacrifice of the first born is said still to be made.

Robinson (C. H.) Did primitive man of Iowa have manufacturing plants? (Annals of Iowa, Des Moines, 1906, 3d s., VII, 538–542, 2 fgs.) From examination of stone axes and tomahawks, flint arrow and spear heads, etc., R. argues that these were not the product of individuals laboring for themselves alone, it being quite probable that there existed "primitive workshops or weapon manufactories in Iowa," which careful research may yet discover.

Roux (*Mme* J.) Excursion aux pyramides de San Juan Teotihuacan. (J. Soc. d. Amér. de Paris, 1906, N. S., III, 53–64, 1 pl.) Describes visit to pyramids of Teotihuacan and results of the governmental explorations, etc., under Señor Batres.

von Schenck (Natalie). The pyramids of Zamná and Kabul. Legend of Uxmal, Yucatan. (Rec. of Past, Wash., 1906, V, 13–15, 2 fgs.) Brief legend of the coming of the magic healer, "Den of Heaven," who taught the Mayas to erect pyramids and large stone buildings, etc., for the worship of Zamná. Kabul is marked with the hand of the Healer.

Schmidt (W.) Fray Bernardino de Sahagun, O. Fr. M. "Un breve conpendio de los ritos ydolatricos que los yndios desta nueva España usaran en el tiempo de su infidelidad." (Anthropos, Salzburg, 1906, I, 302–317.) Publishes, from the MS. in the secret archives of the Vatican, the Spanish text of the "sumario" of the first book of the "Breve conpendio," which differs in some details from the first book as pub-

lished in Bustamente's edition, and has, moreover, some additions, which are noted.

Seler (E.) Das Grünsteinidol des Stuttgarter Museums. (Intern. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 241–261, 25 fgs., 5 pl.) Describes in detail a green-stone idol, — skull headed skeletal figure — probably a representation of the planet Venus in its form as evening star and leader of the sun, "a form of the dog-headed god Xolotl, who leads the sun down into the earth and up out of the earth into the sky."

—— Die Altertümer von Castillo de Teayo. (Ibid., 263–304, 69 fgs., 18 pl.) Describes in detail the pyramid, "temple," stone pillars and figures of deities, etc., of Teayo, the site of an old Mexican "colony" or border-garrison in the Totonac-Huastec country. The deity of the temple was the goddess of maize, agriculture, etc. The figures on the stone-pillars are like those in the Aztec MS. Among the stone-figures are those of the maize-goddess, water-goddess, the earth god (Xipe Totec), the rain-god (Tlaloc), the god of music, dance, and play (Macuil Xochitl), etc. The finds at Teayo indicate that there were practised in that place the same rites and ceremonies as at the Aztec capital.

Serpent Mound (The), Adams county, Ohio. (Rec. of Past, Wash., 1906, V, 119–128, 8 fgs.) General description and history, based on the recent book of E. O. Randall, *The Serpent Mound, Adams County, Ohio. Mystery of the Mound, and History of the Serpent.* (Columbus, 1905, 125 pp.)

Stolyhwo (C.) Czaszki peruwiánskie. Crânes péruviens. (Bull. Int. Acad. d. Sci. de Cracovie, 1906, 109–138.) Gives, in catalogue-fashion, details of descriptions and measurements (deformation, anomalies, etc.; diameters, circumferences, etc.; indices) of 92 Peruvian skulls (83 adult, 9 children, — 2 hydrocephalic), of which 75 are in the Broca Museum at Paris, 11 in the Zootomic Laboratory of the University of Warsaw, and 6 in the Museum of the Anatomic Institute, Warsaw. Only 6.02 percent of these Peruvian skulls are not deformed, — in adults the forehead is more flattened than the occiput, in children vice-versa. In the 83 adult skulls no case of metopism occurred. In adults the lambdoid suture tends to be the most complicated, in children the sagittal. The *os Incæ* occurred in 21.99 percent of all skulls, *fovea occipitalis* in 25.61 percent of adults; trepanation was observed in 3.30 percent of 91 skulls. The cephalic index ranged in adults from 69 to 107, the most frequent being 92 and 93; 85.55 percent were brachycephalic, 6.02 percent dolichocephalic in adults, — of the infant skulls 57.15 percent were brachycephalic, 14.29 percent dolichocephalic. (The two hydrocephalic skulls had indices of 96 and 112.) Hypsicephaly, chamaecephaly, leptofrontaly, leptoprosopy, hypsiconchy, leptorrhiny, leptostaphyly, and mesognathism are the prevailing types.

Strebel (H.) Ornamente auf Tongefässen aus Alt-Mexico. (Intern. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 305–307.) Brief account of ornamented pottery collection from various parts of Vera Cruz, particularly the provinces of Totonacapan and Cuetlachtlan. The chief culture-groups represented are the "Cerro Montoso" (Totonac) and the "Ranchito de las Animas" (Cuetlaxtec). There is besides a certain unity, with differences due to genius, skill, purpose, etc.

Teschauer (C.) Mythen und alte Volksagen aus Brasilien. II. (Anthropos, Salzburg, 1906, 185–193.) Gives German text of 8 animal-tales, — literal translations from Barboza's *Poranduba* and Magalhães' *O. Selvagem.* These relate to the *maguary*, the colibri, the tamusuparâ (*Monassa nigrifrons*), the japins (*Cassicus hemorrhous*), the *yurupichuna* (a species of monkey), the *jabuti* (tortoise; these stories are of the tortoise and deer, tortoise and jaguar, tortoise and man, tortoise and giant), etc.

Thalbitzer (W.) Eskimo dialects and wanderings. (Intern. Amer.-Kongr. Stuttgart 1904, 1906, 107–118.) The data here presented have appeared in the author's monograph, *A Phonetic Study of the Eskimo Language* (Copenhagen, 1904).

Thomas (N. W.) Note on a MS. in the British Museum. (Man, Lond., 1906, 26.) Notes on a MS. *ca.* 100–120 years old relating to the Ilongotes of Luzon, referred to and used by Brinton in his *South American Languages* (1892),— he seems to have overlooked several things. T. intends later to publish a vocabulary from Port Mulgrave, Alaska.

Toldt (C.) Guaranyschädel. (Mitt. d. Anthr. Ges. in Wien, 1906, XXXVI, 143–146, 3 fgs.) Describes with measurements a female Guarani skull from a grave on the Barra do Rio Itariri, brough

to Vienna by Dr v. Wattstein in 1900, and now in the collection of the Imperial Academy of Sciences, which is markedly prognathic (upper jaw) and possesses other peculiarities (in meatus of nose, etc.). See *Krone* (R.).

Uhle (M.) Los "Kjoekkenmöddings" del Perú. (Rev. Hist., Lima, 1906, I, 1-3.) Treats of Peruvian shell-heaps and kitchen-middens on the coast between Supe and Chala, their contents, age, origin, etc. They are found at Supe, Ancón, Río de Ica, Lomas, Quebrada de la Vaca, La Josefita, San Nicolás, Carquin, Chancay, San Lorenzo, Chaviña, Río de Chala, etc. The most recent data from *ca.* 900 A.D., some are contemporary with the Inca period, some even lie close to the end of that epoch; the oldest probably exceed in age the most ancient remains of real civilization in Peru. The pottery found in the shell-heaps of Ancón, etc., indicate relations with the ornamentation of the older period of Nazca and Ica, that of those of Supe is identical with the oldest of Ancón. Very many of the shell-heaps thus belong to the period 900-1400 A. D.

Upham (W.) The origin and antiquity of man. (Rec. of Past, Wash., 1906, V, 137-141.) According to U., the source of our now cosmopolitan species was in the great tropic regions of the Old World, where our nearest animal kin (fifth or tenth cousins) still live. Only during the late and closing stages of the ice age (*ca.* 15,000 years ago the Lansing man, already Indian, existed). Neolithic man came into western Europe 10,000 years ago, paleolithic man appeared in the Somme valley 100,000 years ago, and at least 200,000 years are required to account for the existence of mankind and the development of the four chief races.

Vignaud (H.) Sophus Ruge et ses vues sur Colomb. (J. Soc. d. Amér. de Paris, N. S., III, 1906, 7-14.) Sketch of life and works of Sophus Ruge (1831-1903), with special reference to his views on the Columbian discovery of America.

Villiers du Terrage (M. de). Un mémoire politique du XVIII^e^ siècle relatif au Texas. (Ibid., 65-76.) Gives the text of a "proposal of peace and alliance with the Cannecis" sent home in 1753 by Kerlérec, governor of Louisiana. The "Cannecis" are the cruel and savage Indians known at this period to the Spaniards as *Apaches*, and to "the Osages, Arkansas, Missouri and Illinois," as *Catoka*. Their reputation was one of pillage and massacre. Reference may be made also to the author's recent book, *Les dernières années de la Louisiane française* (Paris, 1904).

Ward (H. B.) The peculiarities of the "Nebraska man." (Putnam's Mo., N. Y., 1907, I, 410-413, 3 fgs.) (Brief account of one of the skulls of primitive type belonging to the so-called "Nebraska," of the Florence loess, discovered in October, 1906. The skulls of the upper layer may be Indian, but those of the lower "show radical differences." There is "no forehead," and the superciliairy ridges are "enormously developed," - in one case there is a large *os Incæ*. The jaw and long bones also present some peculiarities. See: *Barbour* (E. H.), *Gilder* (R. F.), *Osborn* (H. F.).

Wintemberg (W. J.) Bone and horn harpoon heads of the Ontario Indians. (Ann. Arch. Rep. Ont. 1905, Toronto, 1906, 33-56, 51 fgs., map, bibliog.) Treats of unilaterally barbed, bilaterally barbed, and toggle-head harpoons or fish-spears from various regions of the province of Ontario (in the more easterly counties none have been found, nor farther west than the town of Simcoe, nor in the Niagara peninsula). Nearly all the specimens are from Huron-Iroquois territory, and most have been made in post-European times. Some from Rice lake mounds are prehistoric.

Wood (W. D.) The Ku Klux Klan. (Quar. Texas State Hist. Ass., Austin, 1906, IX, 262-268.) According to W., "the K. K. K., or the Invisible Empire, was the madcap fancy of schoolboys in Pulaski, Tennessee," and "in older hands it proved the fulcrum on which the lever worked that freed the Confederate people, and tore from the hands of the fanatics the fruits they expected to gather from the reconstruction legislation." The K. K. K. "knew how to impress the Negro and to utilize to the fullest extent his superstitious belief." See also an article on the K. K. K. by Thomas Dixon in the *San Antonio Daily Express*, Sept. 4, 1905.

Wren (C.) Aboriginal pottery of the Wyoming Valley, Susquehanna river region, Pennsylvania. (Proc. & Coll. Wyo. Hist. & Geol. Soc., Wilkes-Barré, Pa., 1905, IX, 137-170, 9 pl.) Treats of manufacture, materials, modeling, decoration, etc. See review of volume in this issue of the *American Anthropologist*.

ANTHROPOLOGIC MISCELLANEA

Preservation of American Antiquities — Progress during 1906.[1] — The year 1906 witnessed the successful consummation of many years of effort on the part of this and of many other scientific bodies looking toward the protection of American antiquities by law. A bill was enacted by the 59th Congress creating the Mesa Verde National Park in southwestern Colorado, for the purpose of preserving the remarkable cliff-dwelling remains of that region. This bill had been pending for several years and much difficulty had been encountered in securing its passage owing to the fact that many of the most important of the ruins were situated on the Southern Ute Indian reservation. The measure as passed arrives at a happy solution of the difficulty by creating the national park as provided for and including within the jurisdiction of its officers for administrative purposes all ruins within five miles of its boundaries. This secures what had been so much desired by all, namely, the inclusion of *all* the great Mesa Verde and Mancos Cañon ruins within the National Park.

The 59th Congress also passed the general archeological measure which was warmly supported by this body, known as the Lacey Act, providing for the custodianship by the government of all archeological remains situated on lands owned or controlled by the United States. This act makes it mandatory upon the various executive departments of Government to protect from vandalism and unauthorized excavation all ruins within their respective jurisdictions. It also provides for the creation of national monuments by act of the President of the United States.

The operation of this law has been prompt and effective beyond the most sanguine hopes of its supporters. All ruins on forest reserves, Indian reservations, public lands, military reservations, etc., have been placed under Government protection and the system of policing is being rapidly made effective. Almost no vandalism is now going on in the American ruins. Under the authority of this act, the President has designated as national monuments the following: El Morro or Inscription Rock in New Mexico, Montezuma Castle in Arizona, the Petrified Forest

[1] Abstract of a paper read before the American Anthropological Association at its annual meeting in New York, December, 1906.

in Arizona, and Devil's Tower in Wyoming. Steps are being taken to secure at an early date a like action with reference to the famous ruins of Chaco Cañon, New Mexico.

It is understood that a committee consisting of officials from the three departments — Interior, Agriculture, and War — is preparing uniform rules and regulations for the purpose of carrying out the purposes of the Lacey Act, which will be announced in the near future.

EDGAR L. HEWETT.

Philippine Researches. — In the report of his investigations for the year ending September 1, 1904, Dr Merton L. Miller, then acting chief of the Ethnological Survey of the Philippine Islands in the absence of Dr Jenks, makes the following interesting observations on some of the native tribes which he had visited:

"The Mamanua are Negritos, live in small rancherias, three, four, or five houses in a place, and find their food by hunting wild fruits in the mountains, spearing wild hogs, catching fish and snakes, and raising a few camotes. They wear few clothes, and live in rude shelters, which they abandon often and move to some other place where it may be easier to find food and to hide from strangers. They weave a little coarse cloth, make bows and arrows, and also a two-stringed guitar. The guitar is very likely an idea which they borrowed from the Manobo, with whom they are in contact on the south, and from whom they get by trade the long-handled, iron-pointed spears which they use in killing wild hogs. They are a timid little people, and will run away on the approach of a white man if there is enough time to escape. There are some hundreds, possibly a few thousand of them, in Surigao. It seems likely that a few years ago they were more numerous than at present. I saw a number of rancherias occupied by some 12 or 15 people, where I was told there lived formerly 40 or 50.

"Cholera is, in part, at least, responsible for this decrease. It is entirely possible to visit the Mamanua if one has time to do the necessary hunting for their rancherias, and has a guide in whom they have confidence and who can prevent them from running away at the approach of strangers. So far as my observation goes, the Mamanua do not live in Surigao farther south than the town of Tubay, at the mouth of the Tubay river. It is possible, however, that there are other settlements of them in the mountains farther south, between the Agusan basin and the Pacific.

"The Manobo and the Mandaya live in the basin of the Agusan, in

the mountains which form the divide on either side of the basin, and on the outer slopes of the two divides. By far the larger part of the region which was, until recently, included in the province of Surigao, is occupied by these two tribes, in so far as it is occupied at all. They are much alike in culture and general appearance. Some of the Mandaya appear to be of a lighter color than many of the people of the Philippines. Probably fewer than half of them have been Christianized and induced to live in towns. The remainder still live in rancherias or in isolated houses in parts of the mountains which are not easy of access. There is a good deal of intercourse between the pagan and the Christian sections of the two tribes, but they are not always on friendly terms. A man rarely, if ever, leaves town without carrying a long-handled spear and a bolo. While passing along the trails they are constantly on the lookout for enemies, and on sighting a stranger immediately assume an attitude of defense or disappear at once into the bushes.

"Many of the houses occupied by these people are built high up from the ground, giving the appearance of houses set on stilts. The highest which I saw was between 20 and 25 feet above ground, and built on a clump of bamboo. The bamboos had been cut off at the proper height and the floor built on them. The most common means of access to their houses is a single notched log. Up and down these logs the people, even the children, pass easily and quickly. It is not so easy for one who wears shoes, as the log is not a large one, and therefore the notches are not deep. As the danger of attack from the pagan people becomes less, the practice of building these high houses is passing away. In the time between two visits, two months apart, which I made to this region, a number of the most notable high houses of the town had been abandoned and newer ones built nearer the ground.

"Again, in November, I went to Surigao, ascended the Agusan river, and from Compostela went to the gulf of Davao, passing through an almost unoccupied country over a trail but little used, and arriving at the mouth of the river Hijo in five days. This time I had with me 4 constabulary from Surigao. The few people whom I saw and the three settlements which I passed through had evidently seen very few white people. One settlement with about 40 people was built on a high point, from which it was possible to see the trail in both directions. This little place, known as Amang, was situated near the top of the divide between the Agusan and the Hijo rivers. As soon as I with my small party came in sight there was great excitement among the people on the hill, and in a few minutes the entire place was abandoned, excepting by two men,

one of whom I kept as a guide for the next day. I did my best, by calling to them across the creek and assuring them of our kindly intentions, to induce them to return, but failed. By the time morning came nothing was to be seen or heard of them. One day later, after I had reached the Hijo river, all my carriers but one escaped. Then the constabulary, with the help of the one man who had not run away, built a bamboo raft, and on this we reached the mouth of the river. This region is practically uninhabited, but I saw a few fishermen along the river, and one settlement, apparently abandoned. A few hours before reaching the mouth of the river I came to a number of houses occupied by Moros. From the mouth of the river it is possible to reach the town of Davao in a native boat in a day or less, unless the winds and the currents are contrary."

Dr Emil Schmidt, distinguished for his work in physical anthropology, East Indian ethnology, and American archeology, was born in the village of Obereichstadt, Thuringia, Germany, in 1837, and died in Jena, after a lingering illness, October 22, 1906.

After having studied medicine at Jena in his earlier years, Dr Schmidt first took up his residence at Essen, where for a long time he was house physician to Krupp, the noted gun founder. The problems of prehistoric America appealed to him, and in 1872 he published his first paper on the subject. In 1877 he visited the United States, studying museum collections and making personal acquaintance with workers in the same field. The interest thus aroused never left him, and resulted in the publication of a series of scholarly works on American prehistorics, the most important of which is probably his *Vorgeschichte Nordamerikas*, in 1894.

In the meantime he was giving equally close and successful attention to physical anthropology, more particularly craniology, in which difficult study he soon acquired a reputation for exact statement and conservative judgment. His cranial collection, now a part of the Leipzig deposit, was regarded as one of the finest in Germany. Among his numerous contributions to this science, probably the most important are his studies on the ancient skulls of Pompeii (1882) and on ancient and modern Egyptian skulls (1888), both based upon personal exploration in Italy and Egypt. In the latter study he proved the essential continuity of the ancient Egyptian type to the present day, in spite of conquests and invasions. These and others of his longer papers appeared in the *Archiv für Anthropologie*, while his shorter studies were published chiefly in *Globus*.

Having determined to devote the rest of his life to scientific research,

he had definitely abandoned medicine in 1883 and removed to Leipzig, in order to utilize the university opportunities there afforded. In coöperation with Andree, Ploss, Obst, and other world-known scholars, he founded the Leipzig Anthropological Society, of which he was at different times secretary and president. As privat-docent, and later as special professor of anthropology in the university, he did much to win for the study of man a proper recognition among the sciences. In 1889 he made an ethnologic exploration of southern India, giving particular attention to the primitive aboriginal tribes, the results of which were published under the title of *Reise in Süd-Indien* in 1894 and *Ceylon* in 1897. Soon afterward he was attacked by the illness — a combined heart trouble and sclerosis — which compelled his retirement from the university in 1900 and finally terminated his life. As a physician he took careful note of the progress of the disease and awaited the approach of the inevitable end with calm courage.

As a man Dr Schmidt was most lovable, an authority no less on science than on art, music, and orchard culture, patriotically devoted to Germany, and keeping always a warm thought for his native hills. An appreciative notice by his friend, Dr Richard Andree, appears in *Globus* of November 29, 1906. JAMES MOONEY.

Jeremiah Curtin, the well known ethnologist and translator, died at Bristol, Vermont, December 14, 1906. Born near Milwaukee, Wisconsin, September 6, 1838, Curtin early acquired a rudimentary knowledge of German, Norwegian, and Polish, by talking with the immigrant settlers of the neighborhood. After a course at Carroll College, Waukesha, Wisconsin, he prepared himself to enter Phillips Exeter Academy, made extraordinary progress, and soon entered Harvard, where he was graduated in 1863. When Admiral Lissofsky's fleet visited this country in 1864, Curtin became acquainted with the officers and accompanied the expedition on its return to Russia. It is said that in St Petersburg he obtained employment as a translator of polyglot dispatches, but soon received an appointment to the office of secretary of the United States legation, which position he held until 1870, meanwhile, in 1865–66, serving as acting consul-general. Later, until 1877, he traveled in eastern Europe and in Asia, apparently in the service of the Russian government; but at the beginning of the Russo-Turkish war he left the Russian dominions, and after a year in England, returned to America. In 1883 he entered the service of the Bureau of American Ethnology, conducting studies of the language and mythology of the Iroquois, Modoc,

Yuchi, Potawatomi, Sauk, and Shawnee, and later among various tribes of northern California and of Oregon. He severed his connection with the Bureau named before completing any of this material for publication, and later devoted his attention chiefly to the translation of the novels of Henryk Sienkiewicz and Michael Zagoskin, respectively from the Polish and the Russian. In 1900 he made an ethnologic study of the Western Mongols of central Asia. Mr Curtin is reputed to have had some knowledge of as many as seventy languages and dialects. He had a working command of every principal European language. Among his ethnologic works are: *Myths and Folk-lore of Ireland; Myths and Folk-tales of the Russians, Western Slavs and Magyars; Hero Tales of Ireland; Fairy Tales of Ireland; Creation Myths of Primitive America; The Mongols; Religion and Ideas of the Mongols.*

Professor Frederick Starr of the University of Chicago has returned from the Congo Free State, Central Africa, where he has spent somewhat more than a year in investigation of the native tribes. He spent five months among the peoples of the upper Kasai, making his headquarters near the Bakuba town, Ndombe. In this town four different populations are represented and four languages are spoken. Four different sets of customs are carried on in purity. The Bakuba, Baluba, Bakete, and Batua were here particularly studied. Measurements of a considerable number of individuals were made, and a fairly extensive Batua vocabulary gathered. Observations were conducted on the Bampende, Bachoko, and Baschilele. The Kasai area presents a higher development artistically than any other portion of the Congo basin, and a large collection representing the native industries was secured. Six months were then devoted to the tribes of the upper Congo from Leopoldville to Stanley Falls. Points were selected for stopping off, from which two or more tribes might easily be visited, and about a fortnight was spent at each stopping place. A final month of study was given to the Bakongo in the district of the Cataracts. The results of the expedition in a literary way will comprise: (1) *A Bibliography of Congo Languages*, (2) *An African Miscellany* (in which special studies on various topics will be presented), and (3) *A Manual of the Native Peoples of the Congo Free State.* There will also be published for museum wall-display a series of life-size portraits representing various forms of hair-dressing, skull deformation, and scarring practised by the natives. More than 700 negatives representing types of native life were made during the expedition; measurements were taken on more than 900 individuals; the entire collection of objects brought back numbers upward of 3500.

Dr Seidenadel's Philippine Researches. — On January 26, 1907, Dr Charles Wilhelm Seidenadel of Chicago presented to the Philological Society of the University of Chicago selected chapters of his manuscript *First Grammar of The Bontoc Igorot.* The author, who is a trained philologist and a thorough musican, associated last summer for several months with the members of a group of the Igorot tribe, about thirty in number, brought to Chicago at the close of the Saint Louis Exposition and exhibited at River View Park. Continuous intercourse with these people, often lasting ten hours each day, enabled Dr Seidenadel not only to understand their language, but also to converse with them freely in it upon a basis of mutual intelligibility. He was successful in transcribing between three and four thousand complete sentences, which he first repeatedly tested in actual use and then subjected to critical examination and classification for the purpose of the Grammar.

The linguistic and ethnological importance of a study like that here mentioned is clear in the light of our close national relations with the Philippine islands and of the almost utter lack of trustworthy philological work in the languages of the archipelago. Dr Seidenadel's remarkable initial success, his singular natural gift and special training for making accurate phonetic transcriptions of the spoken word, and his personal friendly relations with a considerable group of the natives prominent in the Igorot tribe, are, it seems to the members of the Philological Society, strong reasons for expecting from Dr Seidenadel's further research in this direction results of very great importance for the linguistic and ethnological history of the islands.

Dr Seidenadel hopes to secure from some source the means needed for residence in the Philippines to complete his studies of the Bontoc Igorot and to extend his attention to other allied dialects.

STARR WILLARD CUTTING,
Secretary of the Philological Society, University of Chicago.

Study of National Eugenics. — The London *Times* announces that Mr Francis Galton, F.R.S., has given a further sum of £1,000, which has enabled London University to revise and extend the scheme for the study of national eugenics founded under his previous benefaction, and will provide for the carrying on of the work of the eugenics laboratory for the next three years. Mr David Heron, M.A., has been appointed Galton research fellow in national eugenics, in succession to Mr Edgar Schuster, M.A., resigned; Miss E. M. Elderton has been appointed Galton research scholar, and Miss Amy Barrington (mathematical tripos, Cambridge) computer. The work in this subject will be carried on un

der the supervision of Professor Karl Pearson, F.R.S., in consultation with Mr Francis Galton. It is the intention of the founder that the laboratory shall act (1) as a storehouse for statistical material bearing on the mental and physical conditions in man and the relation of these conditions to inheritance and environment, (2) as a center for the publication or other form of distribution of information concerning national eugenics. Provision is made in association with the biometric laboratory at University College for training in statistical method and for assisting research workers in special eugenic problems. Short courses of instruction will be provided for those engaged in social, anthropometric, or medical work and desirous of applying modern methods of analysis to the reduction of their observations. The laboratory, which is in connection with University College, is temporarily established at 88 Gower st., W.C., London.

Olchagras. — An interesting illustration of the confusion of similars is exhibited by the history of this word. It occurs in Baudry des Lozières' *Voyage à la Louisiane*, in a footnote, on page 33, to a passage in which he had referred to the Puants, the lowest class of people in Natchez society. He says: "*Olchagras* in the tongue of the savages signifies *puant* in French." Although this statement is made by no other author, it has been supposed that Lozières derived it from some source not accessible to later writers, and it has been referred to frequently as a Natchez term. Its correctness seemed the more likely inasmuch as the last syllable, *gras*, agrees closely with the name of a small subject tribe, the *Grigras*, *Gris*, or *Gras*, known to have lived among the Natchez, and the people of which where ranked among the *Puants*. On page 243 of Lozières' work, however, the name occurs again in a long list of Indian tribes, and a footnote referring to it says: "They are established along the *baie des Puants*." This explains the origin of the word at once. The "*baie des Puants*" is Green bay, Wisconsin, the early home of the Winnebago, whose native name, *Hochangara*, has evidently been corrupted by Lozières into *olchagras*. He was led into an absurd error by the fact that the lowest classes among the Natchez and other southern tribes bore the same name in French as that given to Green bay, though for a totally different reason. The case is rendered stronger by the fact that we already have a word in Natchez, *michemichegipi*, which means precisely the same thing that *olchagras* was supposed to signify. J. R. SWANTON.

Missouri Historical Society. — At the annual meeting of the Missouri Historical Society held January 25th, Mr William K. Bixby was

elected president to succeed Dr Cyrus A. Peterson who had served for two years. Dr Peterson is a founder of the American Anthropological Association, and Mr Bixby was recently elected a life member. The Society has filed papers with the recorder of deeds in St Louis granting a deed of trust to the State of Missouri on property of the Society, consisting of a collection of articles of historical and archeological value and interest. In the future the board of advisers of the Society will act as trustees of the property. A site for a new building in Forest Park has been granted the Society by the municipal government of St Louis, and a bill asking for an appropriation of $100,000 to aid in the erection of the building is now before the state legislature. The Society has contracted to sell the site of its present building for $75,000. Marked progress has been made during Dr Peterson's incumbency; the Society has increased its membership and its working funds, and has established an excellent quarterly magazine.

The British Academy has received the sum of £100,000 for the purpose of establishing a memorial to the late Mr Leopold Schweich of Paris. In accordance with the wishes of the donor, the endowment is to be called "The Leopold Schweich Fund," and is to be devoted to the furtherance of research in the archeology, art, history, languages, and literature of ancient civilization, with reference to Biblical study. There are to be annually not fewer than three public lectures — "The Leopold Schweich Lectures" — to be delivered in London, and as the ordinary rule in the English language, dealing with some subject or subjects coming within the scope of these studies. The residue of the income of the fund, with all sums which may hereafter be added thereto by gift, bequest, or otherwise, is to be applied for the purposes of excavation, and for the publication of the results of original research in connection with one or more of the subjects named. — *Nature.*

Death of Dr Gatschet. — As these pages are passing through the press, word comes of the death, at his home in Washington, on March 16, of Dr Albert Samuel Gatschet, in his seventy-fifth year. Born in Saint Beatenberg, canton of Bern, Switzerland, October 3, 1832, Dr Gatschet pursued his studies at Neuchâtel and Bern, and later entered the University of Berlin. He came to the United States in 1868, settling first in New York City. His philological studies attracting the attention of Major Powell, he was appointed ethnologist in the United States Geographical and Geological Survey of the Rocky Mountain Region in 1877, and on the organization of the Bureau of Ethnology in 1879, he accepted a similar

position on its staff, which he held until ill health compelled his retirement in 1904. Since that time Dr Gatschet had been an almost helpless invalid. An extended notice of his life and work will appear in the next issue of this journal.

Dr Erich von Hornbostel of Berlin, who has recently spent some time making musical and psychological studies among the Pawnee of Oklahoma and at the Hampton Indian School, in connection with the researches of the Carnegie Institution of Washington, contributes to a late publication of the Psychological Institute of the University of Berlin, a valuable paper on the characteristics of Tunisian melodies as taken upon phonographic records, in part by Dr P. Träger in Tunis in 1903 and in part by Dr von Hornbostel himself from a traveling troupe in Berlin in 1904. The melodies noted are chiefly Arab, but with a slight trace of the Sudanese element. The scientific analysis is very close, and the introductory paragraph states that it is the first contribution from African soil to the science of comparative music. The author has also now in preparation an extended study of the music of the South Sea islanders. JAMES MOONEY.

VISITORS to the old Swedish cathedral and university town of Lund will find no little interest in the comparatively recent collections at the Ethnographical Museum illustrating many phases of rural life. Old peasant houses have been taken down, brought from considerable distances, and set up at Lund, among the buildings being an old church and an inn. Models of interiors of houses with costumed figures of inmates give an excellent idea of rustic conditions, reminding one, though on a smaller scale, of the Cecho-Slavonic museum in the Kinsky park at Prague. No catalogue of the collections has yet been issued.— *Nature.*

MR WILLIAM WELLS NEWELL, of Cambridge, Mass., known for his researches in folk-lore, especially in connection with the Arthurian tales, secretary of the American Folk-Lore Society, member of the American Anthropological Association, and fellow of the American Association for the Advancement of Science, died at his summer home in Wayland, Massachusetts, on January 21, at the age of sixty-eight years. An appreciation of Mr Newell's life and work will appear in the next number of this journal.

IT IS ANNOUNCED that the *Journal Officiel* is about to publish statistics of the marriages, births, and deaths that took place in France in 1905. The figures show that, while marriages increased as compared with 1904, births fell off, the rate being the lowest on record. In forty-four departments (as compared with thirty-six in the previous year) the deaths were

actually in excess of the births, and in certain provinces the difference was enormous, the record being three deaths as against two births. An increase in the death rate helps to make the situation more serious.

THE AMERICAN MUSEUM OF NATURAL HISTORY henceforth will publish all articles relating to the various phases of its anthropological researches, not otherwise provided for, in a new series of publications bearing the title *Anthropological Papers*. The first number of the new series is devoted to an article by Mr Charles W. Mead on "Technique of some South American Feather-work," and part 2 consists of Dr Clark Wissler's "Some Protective Designs of the Dakota." Both papers are of extreme interest.

MR WILLIAM H. GOODYEAR, Curator of Fine Arts of the Brooklyn Institute Museum, has been elected an honorary member of the Royal Academy of Fine Arts in Milan, in recognition of the contributions to medieval architectural research in Italy which have been made by the Brooklyn Museum. At the recent meeting of the American Institute of Architects in Washington, Mr Goodyear was made a corresponding member.

PEABODY MUSEUM of Yale University has received the archeological collection of Ingham Institute, which came into the possession of the University by the bequest of William Lampson. The Museum also has received as a gift from Professor Charles Schuchert a collection of antiquities gathered by him during a recent trip through Mexico.

DR V. GIUFFRIDA-RUGGERI, we learn from *Il Giornale d' Italia* for November 30, 1906, has been appointed to the newly created chair of anthropology in the scientific faculty of the University of Pavia. He leaves Rome, where he has been docent and assistant in the Anthropological Laboratory.

IN THE spring course of lectures on science and travel arranged by the Field Museum of Natural History, Chicago, those of anthropological interest are, "The Blackfoot Indians," by Dr Clark Wissler, on March 23, and "The Monuments of a Prehistoric Race," by Mr Frederick Monsen, on April 6.

THE DEPARTMENT OF ARCHEOLOGY of the University of Pennsylvania has received a gift of $40,000 from Mr Eckley Brinton Coxe, Jr. The new curator of the department of Egyptology, Dr D. Randall McIver, is now in Egypt, where he has already begun excavations for the museum.

PROFESSOR FREDERICK STARR of Chicago University, Professor Karl von den Steinen of the Museum für Völkerkunde, Berlin, and Professor S. Tsuboi of the Imperial University, Tokyo, have been elected honorary fellows of the Anthropological Institute of Great Britain and Ireland.

THE CALIFORNIA BRANCH of the American Folk-lore Society held a public meeting in San Francisco, February 7, at which Dr David P. Barrows, Director of the Bureau of Education of the Philippines, delivered a lecture on Mohammedanism in the Philippine Islands.

DR ORONHYATEKHA, otherwise known as Peter Martin, the noted Canadian Mohawk Indian, for many years head of the Independent Order of Foresters, died at Augusta, Georgia, March 4, 1906, aged 66 years. He held a medical degree, was prominent in temperance work, etc.

DR ALFRED M. TOZZER delivered one of the series of five free illustrated lectures at the University Museum, Harvard University, on Sunday, February 17. Dr Tozzer's subject was "The Ruins and the Ancient People of Yucatan, Mexico."

AT A MEETING of the American Ethnological Society at the American Museum of Natural History, on March 4, a public lecture was given by Dr George A. Dorsey of Chicago on "The Human Sacrifice Ceremony of the Pawnee."

THE DEATH is announced of Mr Frederick Stearns, a business man of Detroit, who gathered archeological collections which he presented to the University of Michigan, the Detroit Museum of Art, and other institutions.

MR WALTER MCCLINTOCK, on February 15th, delivered an illustrated lecture on "The Life and Legends of the Blackfeet Indians" in the Sheffield lecture course of Yale University for 1907.

MR A. B. STOUT, of Baraboo, Wisconsin, is working out plans for the preservation of the "man mound" described in his bulletin on the Archeology of Eastern Sauk County.

DR ROBERT MACDOUGALL has been elected vice president for the section of anthropology and psychology of the New York Academy of Sciences for the year 1907.

THE ZOOLOGICAL and ethnical collections made recently in East Africa by Mr Richard Tjäder have been acquired by the American Museum of Natural History.

THE MEETING of the International Congress of Anthropology, August 4–8 next, will be held at Strassburg instead of at Cologne as previously announced.

PROFESSOR OTTO BENNDORF, director of the Archeological Institute of the University of Vienna, died recently at the age of sixty-eight years.

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NOTES ON THE TAKELMA INDIANS OF SOUTHWESTERN OREGON[1]

BY EDWARD SAPIR

Few regions in this country are so slightly known, both ethnologically and linguistically, as the section of Washington and Oregon lying east of the strip of coast land, and in this large area the position occupied by the Takelma Indians, generally rather loosely referred to as Rogue or Upper Rogue River Indians, has hitherto remained quite undefined. The scattered and, I fear, all too scanty notes that were obtained in the summer of 1906, incidentally to working out the language of these practically extinct Indians under the direction of the Bureau of American Ethnology, are offered as a contribution toward defining this position. It may be stated at the outset that many things point to the Takelma as having really formed an integral part of the distinct Californian area, in late years made better known by the work of Drs Dixon, Goddard, and Kroeber.[2]

HABITAT — LINGUISTIC POSITION. — The determination of the exact location of the Takelma is a matter of some difficulty. In all probability the revised linguistic map recently issued in Bulletin 30 of the Bureau of American Ethnology is incorrect in that it gives the stock too little space to the north and east. To the north the Takelma certainly occupied the northern bank of Rogue river

[1] Read before the American Anthropological Association, New York, December, 1906. Published by permission of the Bureau of American Ethnology.

[2] See Dr A. B. Lewis: Tribes of the Columbia Valley and the Coast of Washington and Oregon, *Memoirs of the American Anthropological Association*, vol. 1, pt. 2, pp. 175–178, for a summary of the little that is known of the general culture of southwestern Oregon (Athabascan, Takelma, and Kusan tribes).

eastward of some point between Illinois river and Galice creek, while they also inhabited part of the country on the upper course of Cow creek, a tributary of the Umpqua. The middle valley, then, of Rogue river, the country on the southern bank perhaps as far west as Illinois river, its main tributary, the upper course of Cow creek, and the interior of Oregon southward nearly to the Californian boundary, was the home of the Takelma proper, or, as they called themselves, *Dā^{a}gelmā^{s}n*,[1] 'those living alongside the river,' i. e., Rogue river.

There was, moreover, still another tribe of the same linguistic stock that dwelt farther to the east, occupying the poorer land of the Upper Rogue, east, say, of Table Rock toward the Cascades and in the neighborhood of the present town of Jacksonville. These were known as *Laʻgā^{a}wā^{s}*, 'those living in the uplands,' but were also loosely referred to as *Wùlx*, i. e., 'enemies,' a name specifically applied to the Shasta, with whom the Takelma were often in hostile relations. These eastern Takelma seem to have been on the whole less advanced than their down-river kinsmen. They are said to have been shorter in stature than these, to have used log rafts instead of canoes, and, because of greater economic distress, to have used for food crows, ants' eggs, and other such delicacies, much to the disgust of theTakelma proper, who however do not seem to have been particularly averse to the eating of lice and grasshoppers themselves. The Upland Takelma were much more warlike than their western neighbors, and were accustomed to make raids on the latter in order to procure supplies of food and other valuables. The slaves they captured they often sold to the Klamath of the Lakes, directly to the east. The few words obtained of their language show it to have

[1] The following orthographical signs employed in the writing of Takelma words may require explanation: *ä* is approximately midway between *ā* and German *ä*; all other vowels have their continental values, *e* being always open (like *e* in English *met*) in quality, even when long in quantity; superior vowels (as in *ā^{a}*, *ī^{i}*) denote parasitic repeated vowels, all stressed long vowels being pseudodiphthongal. '(in *k' t' p'*) denotes aspiration; *!*(in *k.! t.! p.! ts.!*) "fortis" articulation as in other Pacific Coast languages; *x* as in German *ach*; *s* midway between *s* and *c* (i. e., *sh* in English shall); ^{s} is glottal catch. Other consonantal signs are as in English, except that *g*, *d*, *b*, are rather weakly articulated surds than true sonants. Three accents to indicate pitch are used: ˊ denotes fall from high to low tone, ˉ denotes rise from normal to higher tone, ˇ is higher than normal but unitonal and with something of the effect of an interrogation in English.

been very nearly the same as that of the Takelma proper, but with distinct phonetic and lexicographic dialectic differences.[1] A few examples will serve to illustrate: —

UPPER DIALECT	TAKELMA PROPER
t!éweks, flea	*t!ewēx*
yegwétci, they bite me	*yegwēxi*
t'gánt'gan, fly	*būs*
wīyip't'e'nda^{s}, as I was traveling about	*wit'e'da*^{s}
k'ü^{u}nàks·t', his relatives	*k'winaxda*

NEIGHBORING TRIBES — PLACE NAMES. — The neighbors of the Takelman stock were largely Athabascan. Below them on the banks of Rogue river were the Chasta Costa;[2] Galice creek and Applegate creek (or 'Beaver river,' as it was termed by the Takelma), southern tributaries of Rogue river, were occupied by isolated Athabascan tribes speaking dialects distinct from those of other Oregonian Athabascans; north of the Takelma, on lower Cow creek, were the *A^{n}kwa* or Umpqua, another Athabascan tribe, called *Ya^{a}galá*^{s} by the Takelma. To the south and east dwelt Shasta and Klamath tribes.[3] So circumscribed were their boundaries and so sedentary their general habits that the Takelma proper hardly ever heard of coast tribes such as the Coos or of the Kalapuya of the Willamette valley.

J. O. Dorsey[4] gives a list of seventeen Takelma place-names, the majority of which, as he himself points out, are Athabascan, strange

[1] I was told of two women residing in Grand Ronde Reservation who still speak this divergent dialect.

[2] In J. O. Dorsey's diagrammatic map (The Gentile System of the Siletz Tribes, *Journal of American Folk-lore*, 1890, III, no. X, p. 228) the Chasta Costa villages are made to extend far to the east on the north bank of the Rogue, all the Takelma villages being put south of the river. Explicit information, however, was obtained of Takelma villages on Jump Off Joe creek and Cow creek, both of which are north of Rogue river, and the Chasta Costa Indians whom I came in contact with always spoke of the Takelma as having dwelt above them. I hardly believe that the Chasta Costa occupied the river farther east than Leaf creek, at the farthest.

[3] Dr Dixon informs me that he found that the Shasta claimed the country east of Table Rock and about Jacksonville, and that he was given Shasta place names belonging to this region. It is possible then that the Upland Takelma did not really border directly on the Klamath, the Shasta intervening; or the country may have been to some extent a debatable territory between the Upper Takelma and the Shasta.

[4] Op. cit., p. 235.

to say, and not Takelma. I very much doubt, however, whether this fact has at all the significance that Dorsey ascribes to it; i. e., "that there was an invasion by the Athapascans, who established villages on all sides of them, and imposed Athapascan names on the Tăkĕlma villages." In view of the fact that the place names procured by myself are without exception pure Takelma words, I strongly suspect that the present ascendency of the Chasta Costa language in Siletz reservation made it natural for Dorsey's informant to clothe the names in Athabascan form rather than to give the genuine native names. Of the few native Takelma names that he gives, I am able to translate only one: Săl-wă'-qă (i.e., *Salwáxa*), which probably means 'at the foot of the creek,' and which must have been applied to a village at the mouth of Illinois river or one of its tributaries; it could hardly have been a "gentile" term, as implied by Dorsey. But one of the names — *Dalsalsàn* — that I obtained showed on examination to be clearly identical with one given by Dorsey. This name, given as the Takelma designation of Illinois river, is identical with Dorsey's Tûl-sûl'-sûn, a "village, which cannot be located."

The geographical names procured are subjoined below; it is unfortunate that the distance of the Rogue river country from the present home of its former occupants and the ignorance of the informant of all the corresponding current English place names made it impossible to identify the location of most of the villages. In regard to the character of the majority of the Takelma place names it is to be noted that they are significant, consisting generally of a phrase descriptive of some natural feature of the place. The first syllable is generally a local element, such as *ha-*, 'in' (perhaps also in Dorsey's no. 8, *Há*-ckûc-tûn, with Athabascan suffix *tûn* 'in,' 'at'); *dakˁ-*, 'on,' 'over'; *gwen-* 'in back,' 'east'; *dⁱ-* 'above,' 'on top'; *gel-* 'abreast,' 'opposite'; *dal-* 'in brush, away from river' (also in Dorsey's no. 13, *Tal'*-ma-mi'-tce, and in *Tûl*-sûl'-sûn); *dāⁿ-* 'alongside' (perhaps also in Dorsey's no. 2, *Ta*-lo'ɬûnnĕ'), *sal-* 'at foot,' 'below' (e. g., in Dorsey's *Săl*-wă'-qă). The second element of the word is often some noun or noun with following adjective indicative of a geographical feature, plant, animal, or the like. Many of the names also are char-

acterized by a final *-k'*, a suffix that cannot be identified with any other formative element in the language, but seems restricted in its use to the formation of place names. Nouns indicating 'person or people from so and so' are formed from place names by a suffixed *-á^{s}* or *-á^{s}n*, the characteristic *-k'* being always dropped. Thus *Gwenp'úna^{s}* is 'one who comes from *Gwenpùnk'*,' and *Dā^{a}gelmá^{s}n* means 'one who comes from *Dā^{a}gelàm*,' or Rogue river, i. e., Takelma Indian.'

East of the Takelma tribes were the following: (1) *Dak' ts!ā^{a}malá^{s}*, or *Dak' ts!ā^{a}waná^{s}*, the latter of which may be translated 'those above lakes (or deep bodies of water)' (*ts!āū*, 'lake,' 'deep water'), the reference being clearly to the Klamath lakes in the high land above the easternmost Takelma; the people meant are the Klamath Indians. The easternmost village of the Takelma beyond Table Rock was (2) *Lat'gāū*, or *Lat'gāūk'*, 'upper country,' inhabited by the *Lat'gā^{a}wá^{s}*, already spoken of as possessed of a distinct dialect of the Takelma. Another name for the village of *Lat'gāūk'* was *La^{s}wayà* 'knife in belly,' referring doubtless to the warlike character of the inhabitants. This warlike disposition of the uplanders is explained by the fact that at *Lat'gāūk'* was waged the first war, that carried on at the instigation of Coyote by the former mythical people against unoffending Jackrabbit. On Rogue river and still east of Table Rock was (3) *Hat īl*. From the manuscript Takelma notes of Mr H. H. St Clair, 2nd, is taken (4) *Dī'tanì*, 'Table Rock.' This is probably to be read *Dīdanī* and may be translated 'rock above' (*dàn*, 'rock'). Dorsey gives "Deep Rock" as the easternmost point of the Takelma and adds that it "has not been found so far on any map." But "Deep Rock" may very well be an Indian pronunciation of the English "Table Rock" (*tēb* would, in the mouth of a Takelma, easily enough be transformed into *dīp'*, the latter pronunciation being much more in accordance with native phonetics). Below Table Rock was (5) *Gelyālk'*, 'abreast of pines' (*yāl*, 'pine'). (6) *Dī^{s}lōmī* was situated near falls of the river and was said to be an unusually large village. (7) *Gwenp'uñk'*. (8) *Hayā^{a}lbā'lsda*, 'in its long (i. e., tall) pines' (*yāl*, 'pine,' *bāls*, 'long'). (9) *Dak' t'gamēk'*, 'above which are elk' (*t'gàm*, 'elk'). (10) *Dīdalàm*, 'over the rocks,' on the site of the present town of Grant's Pass, the county

seat of Josephine county. (11) *Sbīnk'*, 'beaver place' (*sbīn*, 'beaver'), the present Applegate creek. (12) *Dī'p!ōlts!ilda*, 'on its red banks,' was the name of the present Jump Off Joe creek, an eastern tributary of Rogue river. A Takelma village in the neighborhood of this creek, and thus on the north side of Rogue river, was (13) *Dak'ts!-asiñ*, the native village of my informant, Mrs Frances Johnson. Persons from this locality were termed *Daldaniyá'*, implying as another name for the village *Daldanī*, 'rock (is) away from stream.' The reference here is, in all probability, to a well-known *dan mōlōgòl* or 'Rock Old Woman,' a potent supernatural being associated with a round flat-topped rock in the mountains near the village and possessed of great "medicine." (14) *Gwendàt'*, 'eastwards' (?), not inhabited by Takelma Indians. (15) *Hagwāl*, the present Cow creek. (16) *Yūk'yák'wa* was on Leaf creek, and was known to the Rogue River tribes as the site of a salt lick or marsh. It was an especially favored spot for the hunting of deer. (17) *S·ōmō"lùk'* (evidently containing the word *s·òm*, 'mountain'). (18) *Hat!ōnk'*. (19) *Dalsalsàn*, Illinois river. (20) *Dā"gelàm*, 'along the river' (*gelàm*, 'river'), i. e., Rogue river. (21) *Lámhik'*, now Klamath river. (22) *Hat'gw'ā"'xi'*, a place name in the country of the Umpquas.

The hostile attitude which the Takelman tribes adopted on the settlement of the country by the whites was probably the chief cause of their rapid decrease in numbers, and by 1884, at which time they had already been transferred to the Siletz reservation in northwestern Oregon, they counted no more than twenty-seven.[1] At the time of writing they have entirely disappeared as a unity and are represented by a very few survivors whose chief means of communication is either the Chinook jargon, broken English, or some Athabascan dialect. The Takelma language itself is spoken with freedom by only three or four of the older women now living in Siletz. From the most intelligent of these all of my information was obtained. Besides these there are two other women residing at the Grand Ronde reservation who are reported to speak the upland dialect already referred to. We have in the history of the

[1] See Powell, Indian Linguistic Families, *Seventh Annual Report of the Bureau of Ethnology*, p. 121.

Takelma, speaking dialects of a distinct linguistic stock, an excellent example of the appalling rapidity with which many still very imperfectly known tribes of North America are disappearing and of the urgent need of ethnologic and linguistic study of these remnants before they are irrevocably lost.

LANGUAGE. — I shall not here attempt to discuss the language itself, as that will elsewhere be made the subject of a special study. Suffice it to say that its characteristics are such as to mark it off most decidedly from those of the neighboring stocks. Perhaps its most striking features are syllabic pitch-accent and nominal as well as pronominal incorporation of the object and instrument, though it must be admitted that the noun object is not at first sight as evidently incorporated as in the Iroquois. In its general phonetic make-up it offers a great contrast to the harsh system of the neighboring Athabascan and Coos tribes, and reminds one much more strongly of the comparatively harmonious phonetics of northern California. One in itself perhaps not very important linguistic item is of considerable interest as shedding light on the general affiliations of the Takelma. In their noteworthy study on the Native Languages of California[1] Drs Dixon and Kroeber have called attention to the recurrence of a similar word for 'dog' in about ten Californian linguistic stocks, otherwise quite unrelated. The Takelma word for 'dog' (*ts·!ixi*) is closely related to this group; compare for instance, Yurok *tsic*, Chimariko *sitcela*, and Nahuatl *chichi*. The resemblance becomes greater if we suppose, as seems very probable, that *ts·!ixi* goes back to an earlier **ts·!itci* (the sound *tc*, curiously enough, does not occur in Takelma but seems always to have developed into *x*; cf. above yegwē.xi, 'they bite me,' but upper dialect yegwétci, probably a more archaic form). This fact of lexical similarity receives some weight from a consideration of the general north Californian character of Takelma ethnology.

FOOD — FISHING — HUNTING. — The staple food of the Takelma is probably to be considered the acorn (*yanà*), of which there were recognized several varieties, the 'black acorn' (*yana yáhal^{e}s*) being considered the chief. The first acorns appeared in the early spring, at which time they were gathered and prepared by the women, who,

[1] *American Anthropologist*, N. S., 1903, V, p. 13, note 1.

however, were not permitted to partake of them until the men had performed a formulaic ceremony and themselves eaten; only then, and after the vessels had been washed anew, could the women also take part in the first eating. The method of preparation was essentially the same as that employed by the Hupa and the Maidu. A hole about an inch in depth was cut into the ground so as to hold firmly the *p!é'ṣ*, a flat rock on which the acorns were pounded. After these were shelled they were mashed fine by means of the *s·elēk'ʷ*, a stone implement, used for the purpose, of two to three feet in length, or else by the shorter *t'élma*, of about a foot and a half in length. The acorns were prevented from spilling off the flat rock by a funnel-shaped basket, or hopper, wider at the top and entirely open at the bottom, known as a *bō"n*. In the *degàs*, a shallow circular basket-pan, the meal was sifted and was then placed on carefully washed sand, seathing water being applied to extract the elements which impart the bitter taste to the acorn. The acorn dough (*xnik'*) thus obtained was boiled in a basket-bucket (*k!el mcheli'*) constructed of hazel shoots and split roots, the usual Pacific coast method of applying hot stones into the basket being employed. The final result was a sort of mush that here, as farther south in California, formed the most typical article of food.

A second important vegetable food was the camass root (*dīp'*). The root was dug by means of the *t'gapxi'ūt'*, or 'horned *xīū*-stick,' it being the sharp-pointed, peeled-off stick of a hard-wood bush known as *xīù* and neatly fitting at the upper end into a deer's horn to serve as the handle. The roots were prepared for use as follows: A pit was dug into the earth and filled with alder bushes which, when fired, served to heat the stones above. On top of these hot stones were placed the roots themselves, a layer of alder bark intervening between the two. The whole was covered with earth and left to roast. The succeeding day, if the roots were not yet well cooked, a fire was again built, and so on until the roots were thoroughly roasted, in which condition they were called *hīx*. They were often mashed into a dough, and, made into the form of a big pan (*x lé'ṣpx*), kept for winter use. Strings of camass roots (*bēlp'*) were often made by the children and used as playthings.

A favorite food was the manzanita berry (*lōxòm*). These were

pounded into a flour (*p'abā'ᵃp'*), mixed with sugar-pine nuts (*t'gàl*), and put away for future use; they were consumed with water.[1] A peculiar implement used for the eating of manzanita was the bushy tail of a squirrel tied with sinew for the space of about a finger's length to a stick about six inches long. A number of varieties of seeds were in considerable use as food. Among these was the *làmx*, the seed apparently of a species of sunflower. When the plants were dry the seeds were beaten out by a stick used for the purpose (*nōt!ōp'*) into a funnel-shaped deer-skin pouch (*ū'ˢxi*) with the mouth wider than the bottom. When the *làmx* was young and tender, the stalk also was eaten. In a similar way were collected the seeds of the yellow-flowered "tar-weed" (*k'ō'ˢx*), the stalks of which plant were first burnt down to remove the pitchy substance they contained. These seeds were parched and ground before consumption. Neither with these nor with *làmx* seed was water used. Other roots and seeds and vegetable foods, such as the madroña and pine nuts (*t'belé'ˢs*), were also used.

The only plant cultivated before the coming of the whites was tobacco (*ō'ᵘp'*) which was planted by the men on land from which the brush had been burnt away. Smoking was indulged in to a considerable extent and had a semi-religious character, the whiff of smoke being in a way symbolic of good fortune and long life. The pipes were made of either wood or stone and were always straight throughout, some reaching a length of nearly a foot. The custom prevailed, of course, of passing one pipe around to all the members of an assembled group.

Of animal foods the most important, naturally, were the various species of river fish, such as trout (*yū'xgan*), salmon-trout (*t!o'k'wi*), steel-head salmon (*yōls*), silver-side salmon (*álk'*), Chinook salmon (*dōmxàu*), and others; also crawfish (*libis*) and fresh-water mussels (*t!āk'*) were used as food. Fishing was done partly with lines made of a kind of grass (*k!e'da*), the fibers being rolled together by hand, while the hook was obtained by tying two pieces of bone with sinew — in which case mudcat and crawfish served as bait; partly, also, fish were caught in long nets (*lān*) and clubbed when hauled into

[1] Cf. Goddard, Life and Culture of the Hupa, *University of California Publications, American Archæology and Ethnology*, pp. 29–30.

the canoe; finally fish were obtained by spearing with the *māl*, a salmon spear consisting of a pole provided at the end with a sharp-pointed piece of bone fitted into two other pieces of the same material. After the skin of the salmon was removed, the head and tail were cut off, the guts taken out, and the body split through at the back-bone. The several pieces, together with the liver, were then roasted on spits (*k!áma*) consisting merely of split hazel branches stuck into the ground. Baskets of roasted salmon were packed for winter use.

Deer were often hunted by groups of men with the help of dogs. A deer fence was constructed with a small gate opening, above which was strung a bunch of shoulder-blades. To these bones was attached a rope, at the other end of which, away from the wind, a few men watched for the coming of the deer. These had been driven ever since before daybreak in the direction of the deer fence by the dogs, and by men shouting "Wâ wâ wâ!" After a certain number of deer had been thus forced into the enclosure, the shoulder-blades were violently rattled by the men in wait, which so frightened the animals that they ran into the finely spun semicircular traps of *k!éda* grass set for them. Entangled in these, they were easily clubbed to death. Such deer fences were usually built in the neighborhood of creeks or salt licks, and sometimes as many as one hundred and fifty of these rope-traps (*ts'!ūk'*) were set. Not infrequently mountain forests were set afire to facilitate the driving of the deer. A choice portion of the deer-meat was considered the fat (*yàmx*), which was often eaten raw and played with by the children. Similarly to the method adopted for storing away cooked camass, hard dough-like cakes of fat (*yamx xlē'pxdā'*) were put away for use in the winter.

Outside of such larger game as elk and deer the Indians were fond of grasshoppers, generally picked from a burnt-down field and cooked for food, and of the white larvæ of the yellowjacket (*dēl*), the yellowjackets themselves being smoked out of their holes. Salt, obtained from a salt marsh at Leaf creek (*Yūk'yák'wa*), was used in the boiling of meat and cooking of salmon, but dried salmon was never salted.

IMPLEMENTS AND UTENSILS — GAMES. — Several of the implements and utensils employed have already been referred to and have

been seen to consist largely of baskets. Still other basket forms were the *yelèx*, a large open-work burden-basket constructed of hazel or willow; the *p!é'l*^{s}, a small basket-plate to eat out of; the *k!ēl*, a round open bucket-like basket; the *k!ōlōī*, a large storage basket; the *k!ának!as*, used for drinking purposes and of the size of a cup; the *sàk'*, a big basket made of rushes; and the basket-cradle. The ordinary twined basket was built up on a bottom (*delgán*) of four short hazel twigs perpendicular to four cross-pieces, and the twining was done with some root or grass on a warp generally of hazel or willow. The only dyes used in the designs were black and red, the former obtained by keeping the woof strands in black clay, and the latter by dying in alder bark. Designs in white were brought out by means of twining with a straw-like grass known as *gé't*. Spoons (*t!āk'*) were made of both wood and elk-horn; the *s·umxi*, or small paddle as it were, was a wooden stirrer used to prevent the over-cooking of the food.

For the purpose of flaking flints into arrowheads was used the *wits·!amàk'*^{w}, a stick of about a foot in length and tipped with bone. The same instrument was employed also as the twirler in the fire-drill. The bottom board or hearth of the drill apparatus was about two feet long and had drilled into it a hole which was filled with finely shredded cedar bast (*sé'ván*) for tinder. Both the hearth and the twirler were carried about, together with tinder and arrows, in a quiver of sewed fawn or wildcat skins. Arrowshafts were polished with a rough-surfaced plant (*t'gwé'làmx*) that served as file, in all probability identifiable with the "scouring rush." Needles (*yé'xi*) were made of hard wood or bone sharpened to a point and provided with an eye, through which twisted sinew (*k!al*^{s}*s*) was passed as thread.

Under the head of implements may also be mentioned the shinny-stick (*t!élà*) and shinny-ball (*t'bé'k'*^{w}). The women's substitute for the game of shinny was played, generally three on a side, with an object consisting of two little pieces of wood of about four inches in length, tied together at a distance of six inches apart with a strip of buckskin. This *xil*^{s}*k'wi*, as it was called, corresponded to the ball in the men's shinny game and was tossed about by a long pole, the *xil*^{s}*k'wi bēmt'a* (i. e., '*xil*^{s}*k'wi* its stick'). The goals (*bō*^{w})

were merely branches stuck into the ground on each side. Serious quarrels seem to have sometimes ensued from both parties claiming the victory; Mrs Johnson told of a case within her remembrance in which one of the players, a medicine-woman, claimed the victory for her side despite the protests of one of her opponents, and, angered at the obstinacy of the latter, "shot" her with her supernatural power, whereupon the death of the poor woman actually followed some time thereafter.

HABITATIONS. — The typical Takelma house of split sugar-pine boards was not square, but longer than wide, the floor, which was nothing more than the earth stamped smooth, being from a foot and a half to two feet below the surface of the ground. At the four corners of the rectangular depression were set upright posts, to which, on top, were lashed with hazel fiber four connecting cross-beams. The house wall (*wili s·idibī'*) was a neatly fitting series of boards, placed vertically, reaching from the top cross-beams to the floor. Above the top framework was raised a ridge-pole supported (though this point remains somewhat obscure) on two uprights forked at the upper extremity. The *wilī hᵉlàm*, or "house.boards," were then filled in from the top beam to the sides of the house. The door was not round, as was often the case farther to the north, but rectangular, and composed of two or three pieces of lumber put together. As the doorway was raised about three feet from the earth's surface, it was necessary to build up against the "house wall" an approach of earth to admit of entrance. Having crawled into the doorway, into which the door fitted by some sort of slide device, one reached the floor of the house by descending the ladder (*gák!an*), consisting of a pole provided with notches for steps and extending from the doorway to the fireplace. This was in the center of the room, and the smoke-hole, which was here not identical, as in certain California underground sweat-houses, with the door, was provided for by an opening in the roof at a distance of from six to seven feet from the floor. The beds consisted simply of mats of cat-tail rushes spread out on the ground about the fireplace, though it would seem that unmarried girls slept on raised wooden boards or platforms. Such was the winter house. In summer the Indians dwelt in a brush shelter (*gwás· wili*) built about a central fire. The poorer people,

it should also be noted, had to content themselves with a house constructed of pine bark instead of lumber.[1]

The sweat-house of the Takelma was also a quadrangular only partly underground structure and covered over with earth. In one side was the door, while in another was an aperture to allow of the admittance of hot stones that had been heated on a brush fire outside the sweat-house. This fire-hole and the door were often kept closed so as to hold in the steam produced by pouring water on the hot stones. There was generally room enough in one of these sweat-houses for six men, who often spent the whole night therein and then plunged into the cold river water in the morning. Since women were not permitted to enter the sweat-house, they were wont to sweat themselves in a small temporary stick structure covered over with blankets, the hot stones being steamed inside. It was not high enough to allow one to stand in it, and afforded room for only two or three women. After it had served its purpose it was taken to pieces and the blankets carried into the house. There was generally but one sweat-house to a village and this was owned by one of the wealthier men or so-called chiefs, who could not easily refuse admittance to any adult. The fire was built by his servants, not at all necessarily slaves, but poor people who worked for him, dug camass for him in the proper season, and so on, and who were supported by him.

CLOTHING — PERSONAL ADORNMENT — SHELLS. — In dress the Takelma were probably almost identical with their neighbors, the Shasta. The men wore shirts (*halū'$^{u\varepsilon}$xap'* or *halū'$^{u\varepsilon}$k'wôk'$^{\imath\varepsilon}$*), deerskins as blankets (*làps*), blankets of fawn skins being used for children, and buckskin leggings or trousers (*t'gō'$^{\imath\varepsilon}$*) and moccasins (*bēls*), also belts (*xā'l$^{\imath}$sap'*) worn over the leggings and tied in front, and sometimes made of elk-skin. The women, at least among the wealthier class, wore buckskin shirts (*dūk'*) reaching to the knees, fringed with tassels made of a white grass. The hats of the men (*sgi$^{\imath}$xap'*) were made of bear or deer hide, the ears being often left on. The hats of the women, however, were

[1] In one of the myths Coyote and Panther live as neighbors, the house of the latter being of lumber while that of Coyote is made of bark. Coyote desires to deceive two girls, who have come to marry Panther, into the belief that he is himself the one sought, and accordingly "wishes" the bark to become lumber.

round basket-hats (*yūp'*) twined of a white grass. My informant claimed that the Takelma did not themselves make these hats but got them from the Shasta by the purchase of wives. For purposes of ornamentation red-headed woodpecker's scalps were sewed on with sinew to strips of buckskin about four inches wide. These, known as *ts·!ún^{s}s*, were worn about the head across the forehead and tied in back of the head, with strips hanging down behind. Another favorite ornament was the skin of an otter cut into strips. Depending from holes in these were often attached strings of dentalium shells. The strips were attached by women to the middle of the hair and allowed to hang down loose, the hair being parted straight in the middle and made to hang in two bunches. The ordinary method pursued by women in arranging the hair was to tie the two bunches to the sides of the head, but never to braid them. Medicine-men also thus folded and tied their hair in two parts, otter-skins and feathers hanging down as ornaments. These latter were chiefly the tail feathers of the eagle, red-headed woodpecker (*bák^{c}bā^{a}*), and yellow-hammer (*t!é^{c}k^{w}*), and were never used except in the medicine-dance; by ordinary people (*yap!a gamáxdi*, 'raw, uncooked people') they were not used at all except in the war-dance. Still another ornamental device was the working of porcupine quills into buckskin as tassels (*k!abàs*).

As regards mutilations designed for personal adornment, strings of shells were worn through holes in the ears and nose, but lip ornaments were never used. Three paints were employed for facial decoration — black (*sé^{c}l*), red (*mī'^{s}ax*), and white paint (*mānx*). The last of these was reserved for use in war, while red was the every-day color used by men and women alike. Perhaps the most striking ornamental device used by the Takelma was tattooing with needle and charcoal. Boys did not tattoo, but for girls it was considered proper to have three downward stripes tattooed on the chin — one in the middle and one on each side — as well as to tattoo the arms; in fact, girls who were not tattooed were apt to be derided as "boys." The tattooing of the men was rarely facial, but was generally confined to a series of marks on the left arm, reaching from the elbow to the shoulder. These were used, in a manner that reminds one of the Hupa custom,[1] to measure strings of dentalium

[1] See Goddard, op. cit., pp. 48–50.

shells from the tip of the left hand. Each string had *ten* shells of exactly the same length, the strings of greater value having larger shells and thus reaching up to a higher tattoo mark. A string reaching clear up to the shoulder was accounted of the value of one hundred dollars,[1] while one that reached midway between the elbow and the shoulder had a value of half that sum. It is interesting to note, in regard to the dentalium shells themselves, that they came by trade from the north, from a land, as the Indians believed, where dwelt sharp-mouthed people that sucked out the meat, and then cooked and ate it. Other shells besides dentalia were of course used for ornamental and semi-monetary purposes, such as the *gòs·*, a large highly valued rainbow-colored shell, and the *ōhòp·*, half-black shells of bean-like shape employed in the ornamentation of women's shirts. A species of "Indian money" (*ts·!ùlx*) was the *ts·!it gwix* string, generally measuring from arm-tip to arm-tip and composed of round flat bone-like disks; these were often put about the necks and arms of the dead to be buried with them.

NUMERAL SYSTEM. — In connection with the shell money of the Indians may be given the Takelma numeral system. On the surface it seems to be, and to all intents and purposes is, a decimal system, but on analysis of the words themselves betrays a simpler basis. The numerals themselves are as follows:

1. mī′ᵉsgaˢ.	30. xín ixdìl.
2. gā′p!inì *or* gā′ᵉm.	40. gamgámûnixdìl.
3. xí binì.	50. dēhaldanixdìl.
4. gamgám.	60. haᵉí míts!adanixdìl.
5. dē hal.	70. haᵉí gā′ᵉmadanixdìl.
6. haᵉí míᵉs.	80. haᵉixíndanixdìl.
7. haᵉí gā′ᵉm.	90. haᵉígō′ gadanixdìl.
8. haᵉí xìn.	100. t!eimíᵉs.
9. haᵉí gō.	200. gā′ᵉmûn t!eimíᵉs.
10. íxdīl.	300. xín t!eimíᵉs.
11. íxdīl mī′ᵉsgaᵉ gadàk'.	400. gamgámûn t!eimíᵉs.
12. íxdīl gā′ᵉm gadàk'.	500. dēhaldan t!eimíᵉs.
20. yap!a míᵉs.	1000. íxdīldan t!eimíᵉs.

2000. yap!amíts!adan t!ei míᵉs.

[1] These are the values given by Mrs Johnson, but they may be only relatively correct and considerably in excess of the actual absolute values.

Four is evidently nothing but 'two two'; five can be plausibly analyzed as 'being in front'; six, seven, eight, and nine are respectively equivalent to 'one finger in,' 'two fingers in,' 'three fingers in,' and 'four fingers in' (provided *-g̀* represents an alternative, possibly older term for 'four'); ten is 'two hands' (cf. *ūax*-dèk', 'my hand,' and *-dìl*, comitative suffix, 'two together'); the numbers between the tens are the phrases 'ten one on top of'(= ten above one), 'ten two on top of,' and so on; twenty is quite transparently 'one person' (*yáp!a*, 'person' + *-mi^{s}s*, stem element for 'one'), i. e., 'two hands and two feet'; the higher tens are 'three times ten,' 'four times ten,' and so on; the first element of *t!ei-mi^{s}s*, 'hundred,' is obscure, unless it is to be identified with *t!i^{i}-*, 'male,' in which case 'one male person' as equivalent to 'hundred' would in all probability have reference to the highest tattoo mark worn by men on the left arm, for a string of ten dentalia reaching up to it was worth a hundred single dentalium shells contained in a string of lowest value. The spirit of the Takelma numeral system is thus

Position:	Little finger of left under little finger of right	Ring finger of left under ring finger of right	Middle finger of left under middle finger of right	Index of left under index of right.	
Etymology of Takelma word:	Evidently compound of *mi^{s}s*, 'I' and *-ga^{s}* '?'	*gā^{s}m*, '2' + *-bìnì* '?'	*xi-* ? '3' + *-bìnì* '?'	'Two two' = 2 × 2, or 2 indices + 2 thumbs vis-à-vis.	
Value:	1	2	3	4	
Position:	Thumb of right resting on thumb of left	Index of right held in left	Middle of right in left	Ring of right in left	Little of right in left
Etymology of Takelma word:	Thumb of right 'being in front' of left hand	'One finger in'	'2 fingers in'	'3 fingers in'	'4 (?) fingers in'
Value:	5	6	7	8	9
Position:	Two hands free	Two hands and two feet		Extended left arm?	
Etymology of Takelma word:	'Pair of hands'	'One person'		'One male'?	
Value:	10	20		100	

clearly decimal, with a slight admixture of the vigesimal. The analysis just given shows, however, that but the first three numerals and perhaps the fifth are etymologically distinct, the others being secondarily derived from other numerals or else being descriptions of finger positions. We have then here a fairly transparent case of the adaptation of an older quinary or even tertiary system to a more advanced decimal type. In counting by means of the fingers the order followed was from the little finger of the left hand to the corresponding finger of the right. The positions of the fingers, together with the corresponding numeral etymologies and values, may be conceived of in the manner as shown on the preceding page.

It should be said that the positions as here given were not directly obtained but have been constructed from the etymologies and the order of fingering employed in counting. The etymology of 10 as '2 hands,' though quite transparent, was not convincing to Mrs Johnson; 4 as 'two two' impressed her more favorably when it was suggested; 20 as 'one person = hands and feet' she volunteered.

SOCIAL ORGANIZATION. — The social organization of the Takelma was almost the simplest conceivable. Each village (*wili gwalà*, 'houses many'), and the villages were generally very insignificant, was entirely independent or practically so. Anyone who was comparatively wealthy could be called a "chief" (*dā^{s}anàk^{s}*); there does not seem to have been a recognized head chief, though in time of war some one man probably was so considered. Not to speak of a totemic clan organization, which is conspicuously absent in this Oregonian area, we do not here find even the belief in individual protectors or guardian spirits gained by fasting and dreaming during the performance of the puberty rites, that plays so important a part among the Chinookan tribes of the Columbia; among the Takelma only the medicine-man possessed the power to gain such guardians. It seems then that the local village community is the only purely sociological grouping to be recognized among these Indians, excluding the nearly self-evident ones of rich and poor, freemen and slaves (obtained by capture or barter), and the family. It was not permitted to marry within the family, this rule operating so far as to prevent marriage between cousins, and it was forbidden for a man

to marry the sister of his brother's wife. If a man died, his brother was compelled to marry the widow, no matter how many wives he already had (some men had as many as five). There was no well-defined rule against marriage within the village, but as it must very often have happened that practically all the residents of a village were related, it was customary to look beyond the village for a mate, and in many cases even to marry into some neighboring tribe of alien speech, like the Shasta or the Galice Creek Athabascans.

	English Equivalent	Stem	1st Person	3d Person	Address
1	father	*ham-* *ma-*	*wihàm*	*máxa*	*hamē*
2	mother	*hin-* *ni-*	*wihìn*	*nixa*	*hindē*
3	son	*k'aba-*	*wik'abaī*	*k'abáxa*	*hamē* *s'nā*
4	daughter	*beyan-*	*wibeyàn*	*beyán*	*hindē* *s'nā*
5	elder brother father's elder brother's son mother's elder sister's son	*ōb-*	*wiṣ ō bi'ᶦ*	*ō'pxa*	*ōbā* *ōbiyā'ᵃ*
6	younger brother father's younger brother's son mother's younger sister's son	*wā-*	*wiṣ wā*	*wāxa*	*wā*
7	elder sister father's elder brother's daughter mother's elder sister's daughter	*t'-* + *ōb-*	*wit'ōbi'ᶦ*	*t'ō'pxa*	*t'ōbā*
8	younger sister father's younger brother's daughter mother's younger sister's daughter	*t'a-* + *wā-*	*wit'awā*	*t'awāxa*	*t'awā*
9	father's parents father's father's brothers father's mother's sister son's child	*gamd-*	*wigamdì*	*gamdìxa*	*gamdā*
10	mother's parents mother's father's brothers mother's mother's sisters daughter's child	*k!as-*	*wik!ási*	*k!ása*	*k!asā*
11	father's brother father's sister's son	*xdā-*	*wixdaī*	*xdā'xa*	*xdā*
12	mother's brother	*has-*	*wihasì*	*hása*	*hasā*
13	father's sister	*t'ad-*	*wit'adì*	*t'áda*	*t'adā*
14	mother's sister mother's brother's daughter	*xaga-*	*wixagaī*	*xagáxa*	*xagā*
15	woman's sister's child man's brother's child	*siw-*	*wisiwì*	*siwìxa*	*siwā*
16	woman's brother's child man's sister's child	*ts!a-*	*wits!aī*	*ts!áxa*	*ts!ā*
17	mother's brother's son ? father's sister's daughter	*wak'd-*	*wiwak'dì*	*wak'dìxa*	*wak'dā*

	English Equivalent	Stem	1st Person	3d Person	Address
18	wife's parents	*t!ōmx-*	*wit!ōmxàu*	*t!ōmxixa*	*t!ōmxā*
19	husband's parents	*k!ᵉᵉb-*	*wi k!ᵉᵉp'*	*k!ᵉᵉpxa*	*k!ᵉᵉbā*
20	son-in-law	*mōt'-*	*mō'ᵉᵉk'*	*mō'ᵉᵉ'a*	*mōt'ià*]
21	daughter-in-law	*wayau-*	*wiᵉᵉwayaū*	*wayá·uxa*	*wayaū*
22	son's wife's parents / daughter's husband's parents	*k!ō^{u}xa-*	*wik!ō^{u}xà*	*k!ō^{u}xû'mxa*	*k!ō^{u}xā*
23	woman's brother's wife	*lamts!-*	*wilamts!ì*	*lamts!ixa*	*lamts!ā*
24	woman's sister's husband / woman's husband's brother	*s·iyā^{ᵃᵉ}p'-*	*wis·i yāᵉᵉ p'*	*s·iyā'^{ᵃᵉ}pxa*	*s·iyāᵉᵉp'*
25	woman's husband's sister	*yid-*	*wiyidì*	*yidixa*	*yidā*
26	man's brother's wife / man's wife's sister	*nanb-*	*winanbì*	*nanbixa*	*nanbā*
27	man's sister's husband / man's wife's brother	*hasd-*	*wihàst'*	*hásda*	*hasdā*
28	dead wife's / dead husband's / brother's widow / sister's widower — sister / brother	*ximn-*	*wiximnì*	*ximnixa*	*ximnā*
29	husband	*t!ì·* (=male, man)	*t!ìt'k'*	*t!ì'ìt'*]	*ha-ik!ā*
30	wife	*gū-*	*gū^{u} xdèk'*	*gūxda*]	*ha-i!kā*
31	relations	*gwine-*	*gwi neixdèk'*	*gwineixda*]	
32	friend	*k!ū ya* { *m-* / *b-*	*wik!ū^{u}yàm*	*k!ū^{u} yápxa*	*k!ū'yûm*

The degrees of family relationship recognized by the Takelma are brought out in the preceding table, which gives the word-stem, the forms for the first and second persons of the possessor, and the vocative form of the native terms.

Little need be added in explanation of this table. Probably several other degrees of relationship not obtained were recognized. The exact definition of two or three of the native terms is not quite certain, particularly numbers 15 and 16, which, though much less probably, may correspond respectively to 'man's nephew or niece' and 'woman's nephew or niece.' The bracketed terms are such as do not follow the peculiar possessive pronominal scheme of nouns of relationship (1st per. *wi-*, 2d per. *-ᵉᵉt'*, and 3d per. *-xa*, *-a* except in number 4). It is interesting that 'wife,' 'husband,' and 'son-in-law' are such exceptional cases, while 'friend' is provided with the characteristic kinship affixes. If one cared to lose himself in speculative theorizing on the subject, he might be tempted to explain the peculiar position occupied by the term for 'son-in-law' as a survival of a time when wives were obtained by capture, and the son-in-law, so far from being regarded as an integral member of the

family, was considered rather an unwelcome intruder (!). A reciprocal relation is expressed in the vocative form of numbers 1 and 3 and 2 and 4 respectively, also in the terms mutually applied to the first and third generations (numbers 9 and 10).

Little could be discovered regarding naming, but the few names that were obtained (such as *Datʿän-elā'ᵃtʿgwàtʿ*, 'Squirrel-Tongued'; *Gwisgwashān*, cf. *gwisgwas* 'chipmunk'; and *Dīᵉˢálda*, 'On his Forehead') suggest that they were generally descriptive terms, as among the Maidu, and not like the obscure and apparently meaningless names current among the Chinook and the Wasco. Property seems to have been distributed among all the dead person's nearer relatives in both the collateral and succeeding generations. The practice of demanding blood-money (*ībi'ⁱlᵉ*) and remuneration even for comparatively slight personal injuries was well developed. Instead of retaliating, when a blow was received, it was not infrequently preferred to keep cool and say: "*Ts·!ulx ü's·i t!ümũxdaᵉ*," i. e., "Give me money (dentalia), for you have struck me!" — a demand that was legally justified.

In cases of more serious feuds the injured party often had recourse to the services of a so-called "go-between" (*xāᵃwīsāᵃ*) who, after much persuasion and many threats of vengeance, prevailed upon the offender to pay an indemnity, the aggrieved party, to cement the new friendship, returning a nominal present. The proceedings, in which the whole community were interested spectators, was marked by a good deal of formality, the go-between, whose person was deemed inviolate, reporting the exact words of each party in the first person to the other and being addressed accordingly, while the interested parties themselves often said hardly a word, each being represented by an "answerer." Needless to say, the "go-between" was paid for his services out of the indemnity received. He ran rather than walked between the two parties, and was generally accompanied by his wife and another. The following account of the proceedings is literally translated from the native text:

"(Let us suppose) people who are related to each other by their children's marriage [see number 22 of table of relationships] slay one

another, then they must 'pay to one another each other's bones,' dead men's bones they pay. Dentalia it is that used to be termed 'dead men's bones.' And then they make speeches to one another and a go-between is hired. Now a certain one acts as go-between. 'Give me blood-money, since you have slain me [i. e., my folks]!' people said to each other. Now he whose folks had been slain, that one hires the go-between. 'Give me of that kind [pointing to strings of dentalia]; give me 100 worth!' the slayer is told. But he is not willing. 'I will not give you anything; I shall even kill some more of your folks!' says the slayer. Then the go-between returns to the other party and recounts what he has been told. '"I'll give you no blood-money!" he said to you,' says he. Then the go-between (adds): '"Not in that fashion (speak)!" that is what I said to him.' (Offended party:) 'Do not tell me that, since you have slain my folks just for nothing, though I did nothing to you. For no reason you have slain one of mine. My girl is dwelling yonder' [i. e., person whose folks were killed had given his daughter in marriage to one of other side; hence they were *k!ō"xû'mxa* to each other]. Thus people spoke to one another in times long past. Then he returns to the other party. '"Just you give me blood-money!" he says to you. I say: "Too far will it go! People will yet be slain,"' says the go-between.[1] Then, recounting what he has been entrusted to say, the go-between tells him thus: 'These people whose relative has been slain have become grieved at heart.' That did people of long ago say to one another when they killed each other. And then once more the go-between returns to the other party. On this side he whose relative has been slain cries: 'Keep on going across! Many things he must give me,' says the injured party. So he returns to the other party. '"Just you give me many things!" he says to you,' says the go-between. 'Give him many things!' says the go-between. He says to the slayer: 'It goes too far. Yet shall people be slain; they will get even with you. Many people will be killed. So for that reason give him something!' says the go-between. Then he [the slayer] says: 'Yes! I shall give him something. Very well!' says the slayer. 'You shall not get even with me, I shall give you something; friends we are,' says the slayer. 'Some little thing do you also give me in return!' Now the go-between returns again and whoops,[2] his heart has become glad.

[1] The go-between warns the offender to pay the blood-money, for otherwise more bloodshed will ensue, the aggrieved party will retaliate by killing one of the other side. This state of things cannot go on!

[2] This is the signal that the offender is willing to "give back the dead man's bones. or pay the blood-money.

Now it is known that it is intended to give him something. Many people (are gathered together). Now he [the go-between] whoops. '"I give you blood-money," he says to you. "Do you too give me a little bit!" he says to you.' Then he relates to them what he has heard. A certain one [the "answerer"] answers him: 'That's what he says.'[1] Then they give each other blood-money. Now on either side they proceed to each other and give each other (presents). The slayer gives most of all, while *he* (who has been injured) gives just a little bit. Thus in times long past people (acted) when they slew one another. And also the women on both sides gave each other many things. And the go-between also is given something, is given dentalia. On this side he whose relative has been slain does that; he it is who gives him dentalia. The slayer does not give him anything."

War and War Implements. — On the whole the Takelma seem to have been a rather warlike tribe, and perhaps their rapid extinction is due in part, at least, to the hostile relations in which they stood to the white settlers. The principal weapon of offensive warfare was of course the bow (*gál*$^{\epsilon}$) and arrow (*wilàu*; shaft without flint head = *sméla*$^{u\epsilon}$*x*); the former was made of a single piece of wood, reached a width of about an inch and a half in the center, and was polished, like the arrow, with the rough *t'gwe'làmx* weed, probably the "scouring rush." The tapering ends of the bow were notched to allow of the putting in of sinew, which was laid horizontally in several layers on the back of the bow over a glue consisting of steel-head salmon skin rubbed over it. Over the sinews black, red, and white paints were laid in various geometric designs. The bow-string (*gál*$^{\epsilon}$ *ts·!ugwā'*^{a}) also was made of deer sinew.[2] It is peculiar that among the Oregon coast Athabascans the bow was held vertically, while among the Takelma it was always held horizontally, the warrior holding an extra arrow in his mouth in readiness for the next shot. It was considered advisable, in order to render them more effective, to steep the flint arrowheads in rattle-

[1] The formula used by the "answerer" to report to the chief party what the go-between has to communicate.

[2] As an item of random interest it may be noted that the same term was used also in connection with a common method of carrying a salmon. The head and tail of the salmon were tied to the ends of a string used to carry it so that they turned in somewhat like the ends of a stretched bow. The concavely bent fish was the "bow," the carrying string the "bow-string."

snake blood. For defensive purposes were used elk-hide hats, painted with decorative designs, and armor. The latter was composed of sticks of wood covered with two undressed hides of elk or buck sewn together and decorated, after the removal of the hair, with painted designs. The armor was without sleeves and reached only from the neck and below the arms down to the hips.

The chief symbol of being on the warpath, outside of the characteristic white paint,[1] was the tying of the hair tightly in back of the head; the phrase "he tied his hair tight" (*s·ú^{ɛ} üdü'k!ixdagwa t!bā'^{a}gant!*) is synonymous in the myths with "he prepared for war." It was customary for women to participate in the war dance, and they often accompanied the men in the fight, watching the slaves and cooking for the warriors. It is remarkable that in the war dance (in which the brandishing of arrows seems to have been the chief element), as also in the menstrual and medicine dances, the drum was absolutely unknown, time being kept by stamping with the right foot. This is another of those points of detail which differentiated the Takelma from their Athabascan neighbors. The only musical instrument known to them, indeed, seems to have been a rude flute or fife (*xdeīt'*) made out of a dry reed of the wild parsnip. It was used for love ditties.

PUBERTY AND MARRIAGE. — Of the dances just mentioned, perhaps the most important socially was the menstrual dance (*ẇü^{ü}'lham hōyōdagẇán*). At the time of the first courses, which ordinarily occurred at the age of thirteen, the girl's father invited his neighbors to a great feast for the space of five days, or rather nights (five was the mythical and ceremonial number of the Takelma). During this period the girl was not permitted to eat anything till midday, when an old woman came to her and directed her to run five times around two trees. After this she was allowed to eat, but forced to abstain from food again from about 4 o'clock in the afternoon to noon of the next day. As regards personal appearance, she had her bangs of hair cut off and painted herself with one red and four black

[1] The whitish color about the foreheads of grizzly bears is interpreted as war paint and brought into connection with their ferocity. In one of the myths the Grizzly girl (*xamk' ẇa-iẇi'^{i}*) puts dust, i. e., white paint, on her forehead before making war on her Eagle husband.

stripes on each cheek. During these five days she was subject, of course, to a number of taboos. She was not permitted, for instance, to look at the sky or to gaze freely about her, and to insure this a string of the bluejay's tail feathers tied on close together was put about the forehead of the girl and tied to the hair in back, an arrangement that effectually screened from her view everything about her. During this time also she was obliged to sleep with her head in a *bõ̃ⁿn*, a funnel-shaped basket such as was used in the pounding of acorns, the declared purpose being to prevent her from dreaming of the dead, a bad omen. During each of the five nights the menstrual round-dance and songs[1] were performed. A circle was formed of alternating men and women with interlocked hands, while in the center stood the young girl (or rather young woman now, *k!aˢis·õ'-k!da*), arrayed in all her finery of hair, nose, neck, ear, and waist ornaments. The outer circle danced and sang around her, all following the song of the leader.

Before marriage girls were not allowed to move about freely and were very carefully guarded by their parents. On the whole, marriages seem to have been determined upon by the parents of the parties concerned, often at a ridiculously early age, the personal likes or dislikes of these latter being apparently but little regarded. The Indians, not unlike a certain kind of white philosophers, claimed that a couple that did not love each other when first married learned, in course of time, to love each other best of all; and vice versa. A girl was always purchased for the boy with dentalia or the like by his father or other male relative, after which the bride proceeded with her folks to the bridegroom's house, the whole party dragging along a supply of exchange presents in the shape of baskets, women's hats, camass, dried salmon, and other such household articles. No dances or singing formed part of the marriage ceremony. The person or persons who escorted the bride to her future husband's house were specifically referred to as *t!amyanwáˢs* (cf. *t!amayánwiaʷˢ*, 'people escort bride with presents for future husband'). The social status of the children depended very largely, of course, on the price paid for the mother, so that poor people's children were looked

[1] A number of these "round-dance" songs, also war and gambling songs, were taken down on the phonograph. It is hoped to publish them in the near future.

down upon as not much better than dogs. So young was sometimes the newly married girl, that instances are related of how she dared not, out of fear, speak to her husband, but sought every opportunity to escape from the house. It was customary for a newly married woman to rise very early and, before eating her breakfast, gather firewood for all of her husband's folks.

The indebtedness of the husband to his father-in-law did not entirely cease with the initial purchase of the wife. Not infrequently the son-in-law, living perhaps in a far distant village, would load his canoe with presents of dried salmon or the like for his wife's parents, and visit them for a period in company with his wife. The word used to indicate this customary visit, *mōt'wò·k'*, may be literally rendered 'son-in-law arrives.' After the birth of the first baby an additional price was paid to the girl's father in the shape of a deerskin sack filled with Indian money. This payment was considered as equivalent to the buying of the child and was metaphorically referred to as "making its pillow" (*gwenp!ī·xabā' k!emcī*). For a month after childbirth the mother was forbidden the use of meat. At the expiration of this period the child was taken to the river and waved five times over the water as a sort of "baptismal" rite.

MORTUARY CUSTOMS. — When a man died, he was decorated with dentalia and other Indian finery, wrapped in a deerskin blanket, and buried in the ground. Acorns were buried with him, and a great number of baskets were strewn over the grave which, it is almost needless to say, no one dared touch. The practice of killing slaves at the grave, a custom that obtained, at least on the death of a great chief, among the Wasco, was here unknown, nor was the custom of canoe burial in use. Widows bedaubed themselves with pitch and cut their hair close as signs of mourning, but widowers did not find it necessary to be so demonstrative. A man killed in war away from home could not be buried in the regular way; in such a case it was customary to burn off the flesh of the corpse, gather up the bones, take them home, and bury them there with the usual valuables.[1]

BROOKLYN,
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[1] Certain phases of the religious life of the Takelma have been described in "The Religious Ideas of the Takelma Indians of Southwestern Oregon," in *Journal of American Folk-lore*, XX, 33-49. The Takelma mythology will be treated in another place.

THE RACIAL DERIVATION OF THE OSSETES

By KARL S. KENNARD

Of the many tribes of barbarians which, from the fall of the Roman Empire, have left their mark of war or speech on the western portion of Europe, a few have been preserved in some form or other until the present time and have left the legacy of their manners or features to an admiring posterity. The Franks have contributed to the forming of one of the greatest of modern nations by the strength of their arms and have transmitted for its guidance the wise laws of eleven centuries ago. The Gothic love of adventure still survives in the spirit of their descendants. The Belgæ named the country of Belgium, while from the Teutonic Suevi modern orthography has fashioned the duchy of Swabia. In the combats, migrations, and changes of speech it is not unlikely that most of the tribes which contributed in one or another way to the changing of the chart as well as of the caste of Europe should have become to all purposes lost; so that, save in a few cases, the name alone survives as that of a people who once lived and fought for mastery of land and kind at and after the opening of the Christian era. It is therefore a matter of interest to inquire, of a tribe of people which occupied a more or less conspicuous place in the history of centuries past, whether or not there remains any trace in the physical characteristics of the people of to-day to form some idea of the racial stock to which they belonged, and whether their descendants or representatives, should any now exist, have departed in ethnical characteristics from the parent type. To determine this it is obviously necessary to gain some information of the original stock.

Anthropological investigations have developed the fact that the head form, color of hair and eyes, and stature are permanent and persistent racial features. Application of these tests to ancient and living mankind has demonstrated, especially in Europe, three physical types of race, namely, Mediterranean, Alpine, and Nordic. Should

sufficient remains of an ancient people upon which to apply these tests be obtainable, problems of racial affinities between prehistoric and modern individuals are comparatively easy of solution. But when the expression of bygone people are found only in existing populations, the results are more difficult to obtain. However, with fairly accurate geographical localities furnished us, no longer misled by the idea that identity of speech means identity of race, and with the fundamental physical types of Europe defined, we are in a position to see what modern science and ancient geography combined might offer in an attempt to trace the affinity of some modern with some ancient people.

There is no more fertile field in which to attempt such an inquiry than that afforded by the Caucasian mountains. The Caucasus, on account of its geographical position, has been the meeting place of many nations. Occupying the waist of the isthmus between the Caspian and the Black seas, its girdle of high mountains has ever formed an insuperable barrier to migration; it offered no field for conquest; the invader always passed it by, and such inhabitants as it had were forced to take refuge in its fastnesses either by overwhelming attacks or through economic factors. From the south over Persia and Arabia, from the north by way of the Volga and the Don — from everywhere have types and kinds of people drifted to the foot of this barrier. But the inhabitants of this region were not affected by these — unmolested in their mountain home, they were able to retain the physical characteristics which they brought with them.

Of the tribal divisions of the Caucasus there are ten of importance. Of the dialects there are sixty-eight, each denoting, according to former opinion, a separate race of men. It was the polylinguistic factor that gave rise to such theories. But when this apparent diversity of population is examined by modern anthropology, a different opinion is reached. First, the form of the head shows an index ranging from 86 in the Lesghians to 83 in the Tchetschens, indicating marked brachycephaly. Again, all the Caucasians are dark, with chestnut hair and brown or black eyes as a rule. In stature they range from 5 feet 4½ inches to 5 feet 6 inches. How is it that such uniformity of physical type here prevails? The belief is that that type of people possessing the greatest aptitude and

adaptiveness to mountain environment has selected these higher altitudes for its habitat, while others have either settled at the base of the mountains or have passed on through the only gateway to the north, the Pass of Dariel. For those who selected the mountains as their home, isolation, both general and contiguous, has been complete. They have not blended with each other nor with other people, so that their primary characteristics, and especially the broad-headedness which these mountaineers possess, were theirs in the beginning, having been brought from their original center of distribution. In other words, they possess in all its purity that physical type, known as the Alpine type, which is found throughout the central part of Europe to the Pyrenees. As before stated, the form of the head being the most persistent of the physical criteria of race, and all the more so when favored by isolation, it is not to be believed that this feature among the Caucasian tribes is an acquired one. It is a racial factor pure and simple.

From what direction are we to believe that the Alpine type entered Europe? Surely not from the north, for that region furnishes an entirely different racial type, namely, the Nordic. The path of the Alpine race is clear. It extended from the Pamir, through the north and east of Persia, across Asia Minor, and into the mountains of Central Europe, to Spain, while here in the Caucasus is the connecting link.

From the general uniformity of head-type that has been shown to occur in this locality, there are two exceptions. One is found in the tribe of the Ossete, lying on both sides of the mountains, around the Pass of Dariel; the other, among the Abkhasians, lying over against the Black sea. The latter are a branch of the Circassians. The custom of cranial deformity is prevalent among them, rendering cranial measurement very uncertain. Yet even with this they possess an index of 81, and their longheadedness is more apparent than real. Thus of all the population of Caucasia the Ossetes only present a deviation from the prevailing type. They form an exception to the rule. This is a most important fact.

Since the publication, in 1885, of the results of Chantre's investigations on the inhabitants of the Caucasus, the Ossete have been regarded as a people immigrant into this region. And even be-

fore this time historians found much similarity between their manners and customs and those of the Goths, Germans, and other Teutonic tribes. It has further been believed that these people form the remnant of the tribe of the Alani, who occupied the region to the northward some time before the fall of Rome. However this may be, their position upon the only pathway through this territory makes the theory that they are not indigenous to the country at least tenable. The main question is: From what direction did they come? We will see that they cannot be included among the Alpine people of this region. The direction of their emigration was either from the north or from the south. They are newcomers of comparatively recent date — certainly within the historic period. And as this region does not afford any peculiar economic advantages, some force other than the mere desire of migration brought them here. It is generally believed that these people migrated from the south — from the Iranian plateau and Arabia. Let us see if the facts warrant the conclusion.

In the region of Iran there are two racial types, both present in the modern population, both to be found in the remains of the far more ancient one. No change in the physical characteristics of these people has occurred since the earliest times. One of these types, the Alpine, need not concern us here. The other, the Mediterranean, is the one from which the Ossetes, if they came from this direction, are bound to be derived. The Persians, the Kurds, the Afghans, and the Hindus all belong to this race. "These people are all long-headed and dark brunettes, inclined to slenderness of habit, although varying in stature according to circumstances." We recognize in them also the southern Italians, the Spaniards, and the Portuguese — dolicocephalic (cephalic index between 75 and 80), black or dark-brown eyes, stature varying between 5 feet 1 inch and 5 feet 6 inches. These are the physical characteristics of the Mediterranean race.

Now, what does anthropology show in regard to the Ossetes? As is to be expected, their cephalic index ranges from 79 to 81. One of the features which distinguishes them from the other inhabitants of the Caucasus is long-headedness. It is true that they are at the top of the long-headed list, but of this more anon. The nose

is long, straight, and thin at the end, certainly a contrast to the broad, flat end and spreading alænasi of the Kurds and the Suzian. In stature they are tall. Measurements which I personally made upon seven Ossetes at the Immigration Station, Ellis Island, New York, in the winter of 1904, give the following results: Two presented a height of 5 feet 7¼ inches, one each of 5 feet 6¼ inches, 5 feet 6¾ inches, 5 feet 6 inches, 5 feet 7⅛ inches, and 5 feet 7 inches.

Having at the station, at the same time, many individuals of the Mediterranean race, the contrast was all the more striking, even to simple observation. But not upon this small number of observations only do we form an opinion. It is a fact, proven by numerous authorities, that the Ossetes are a tall people, and stature, as we shall see, is a persistent feature of a certain racial derivation. Lastly, the most peculiar fact of all is, that more than 30 percent of them are blonds. Such a proportion occurs nowhere else in or near the Caucasian mountains; nor does it occur among any other people supposed to be derived from a Mediterranean stock. Of the seven individuals before mentioned, five had blue eyes and lightish hair, the darkest of these five having light-brown hair. Of the others, one had gray eyes with dark-brown hair, and the last had hazel eyes and black hair. As stated, we know all the Caucasians to be dark brunettes, this form of pigmentation prevailing everywhere throughout this region.

But here are some strange facts relating to the Ossetes, especially if they are immigrants from the direction of Iran. They have either departed from their original type if they came from the south (and that in a comparatively short time), or else they never came from that region at all. If they are an offshoot of the Mediterranean race, they must have brought with them the physical characteristics of that racial type. Nor did they branch off from this parent stock with stature and blondness as their heritage. The Mediterranean traits we have detailed above. If the Ossetes once possessed these features, how did they lose them? Not by blending with the original inhabitants of the mountains, for among them are no blue-eyed or light-haired people. But, granting such to be present, the mountain isolation prevents intermixture in this region.

Racial individuality is here complete. Nor does the altitude suffice to explain the phenomenon of these blond traits, for if this factor produced a change of 30 percent in the Ossetes, why did it not have a similar effect on other mountain tribes in this locality? Again, there is their stature. This altitude could not have effected a change from a Mediterranean stature to one of 5 feet 6 or 8 inches; fertile soils, such as rich plains afford, and a hospitable environment are required for that. These are not found here. Mountain life does not increase stature, it rather tends to shorten it; and if the Ossetes are a tall people in their present habitat, it is safe to assert that they were always so. If we have here any result of the influence of altitude on stature, it would seem to be that of retrogression — a change from tall to medium sized.

Nor can we account for the blond trait among the Ossetes either by racial intermixture, as we have seen, or through the effect of altitude, although the latter favors blondness. The effect of altitude on pigmentation does not here correlate with stature, for mountains do not increase stature and produce blondness at the same time. If such does occur, however, another factor — that of race — is at work, but that is absent here. Nor does social selection explain the situation from the Mediterranean point of view, for the inbreeding of these primary traits would serve only to accentuate them, and shorter stature and darker hair and eyes would result. Thus, eliminating the factors of environment and racial intermixture or selection of any kind, the height and the blond tendency of these people seem to us to be simply a matter of race.

It would therefore appear that one cannot look to the direction of Iran or Arabia as the place of origin of the Ossetes. They do not possess the characteristics of the peoples of this region; and in the Caucasia no blond or tall people have offered the opportunity of assimilation. As we have endeavored to show that the Ossetes do not possess the features of the Mediterranean type, we must see if the north can aid us in our search.

To the south of the mountains we have observed that there have prevailed since ancient times two racial types. To the north we find that to-day there are two — the Alpine (a recent intrusion into Europe from the southeast), represented by the Slavic people, and

the Mongol tribes about the Black and Caspian seas. It is of the country *outside* of the mountains that we speak, for in the highlands themselves the Alpine race has long been established.

The other racial type found in the north is the Nordic, a highly specialized type represented by the tall, blond, long-headed Germans, Scandinavians, and Lithuanians of the present time. This type is likewise a very old one in southern Russia, and has left its impress on the land in which it lived and on its inhabitants. Possessing characteristics distinctive enough to qualify it, it is not needful to our purpose to discuss its more primitive origin. It constitutes a well-recognized and separate ethnic type of high antiquity, and is to be treated as one of the fundamental races of mankind.

Long before the advent of the Alpine race into Europe the Nordic race had occupied the territory north of the central highlands of the continent in the pristine manner of early man. Gradually responding to the laws of social and other forms of evolution, its representatives passed through successive stages of culture, until finally we find them separated into tribes, clans, and families, possessing the manners and customs characteristic of their social and intellectual status. Let it be remembered that unless we go back to a period antedating even the specialization of the Nordic race, namely, to the early Stone age, we have no evidence of any people other than this Nordic type occupying the northern portion of Europe and extending southward to the Alps. This evidence is exemplified by the population of to-day. The Finns are the representatives of these ancient people driven asunder by the incoming Alpine invasion from southeastern Europe. Pushed to the north and to the south of Russia, their descendants now occupy the corners and edges of the region where once they were supreme.

As tribal formation is a social characteristic as well as a natural safeguard of even the most primitive of human beings, we would naturally expect to find such a state of affairs among these people. In truth, historians tell us of and locate accurately for us a tribe called the Alani, which about two hundred years before the Christian era occupied the territory north of the Caucasus mountains and extended northward between the Volga and the Don. They have been described to us as a bold, warlike people, rejecting slavery, having

an elective monarchy, a religion advanced beyond the nature worship of savages, refusing to practise the custom of self-mutilation, and following their conquests by colonization. Of white complexion and yellowish hair, can it be doubted that here are described a tribe of the Nordic type? With institutions and an individualization thus far advanced before any racial migrations, before any chance of racial displacement or intermixture, when Rome alone represented the civilization of the world, we can not doubt that the Alani are of a race of high antiquity. And from whom else could these people be derived if not from that racial type so prevalent at that early period in this part of Europe? Archeology as well as anthropology has shown us that these people were the Finns.

Engaging the Roman arms at various periods in their history, the Alani retained their power and political independence until 176 A. D., when they suffered severely from an invasion of the Huns, by whom the tribe was divided, the majority accepting the favor rather than the sword of their conquerors, whose army they accompanied into western Europe. Separating from the Huns in Pannonia, they associated themselves[1] with various Teutonic tribes. They established settlements in Gaul and Spain, especially around the cities of Orleans and Valencia, and in Lusitania and Bœotia, where after some years they lost their identity by becoming merged with the conquering Visigoths.

That portion of the Alani who escaped captivity remained in their former position, maintaining some political independence, witnessing the Slavic invasions of the ninth century, the Mongol and Tartar raids in 1221, and finally subjected by the Mongols in 1227, they disappear from history. Yet on the outskirts of the country which they once held and in the locality where their national unity was destroyed, we find a population presenting the physical characteristics of an ancient northern type. Dare we assert that the Ossetes are the remnants of these Alani? The idea is not new. We have tried to approach it only from the anthropological side. It has been conceded that the Ossetes are not indigenous to the Caucasia; the position which they occupy seems to indicate that they

[1] In the absence of any stated reason for this, may we offer "consciousness of kind" as one?

are en route as it were. And we believe that we have proven — if physical characteristics count for anything — that they are not of southern derivation. At least it is our theory that the Alani, being pushed from their home land by Hun, Mongol, and Tartar, decimated and dispersed by successive invasions, have retreated into the mountains and occupy, as a last stand against the Asian hordes, the only position they could obtain — the country around the Pass of Dariel. For the mountain fastnesses had long been occupied by the broad-headed Alpine type. And as the Alani at 200 years B. C. were well seated in southeastern Russia, to what people but the Finns can we look as their progenitors? Archeology and anthropology have proved that the Finns occupied all of Russia. They conform to the classical Nordic type, and if the Ossetes present distinctly two of its features and show evidence of having once possessed the third, what other inference can be drawn? We have shown the Ossetes to be tall, and, in dismissing the subject of stature, we quote from one of the leading authorities that, "never has a physical trait shown so surprising a persistency as in the height of the Teutonic people."

Another question that must be squarely met is this: Is it possible that, thirty percent of the Ossetes being blond, seventy percent have deviated from the original type? Would it not seem more probable that the smaller proportion represented the change in pigmentation? If all the Ossetes entering this region were brunette, in what manner could the thirty percent deviate from the original? We are unable to determine how, and have gone to some length to prove it. Not racial intermixture, for there are no light populations here from which to draw. Not social selection, for brunette traits would become only the deeper. Not environment, for the law governing stature is against that as well as the absence of any marked degree of blondness in the other mountaineers.

On the other hand, if all were originally blonds, how would it be possible for seventy percent to deviate from and thirty percent remain true to the original type? Nevertheless, we believe that this has happened. Bearing in mind the facts that the Ossetes occupy the only passage across the mountains, thus having egress

to the country lying on each side of them, that the inhabitants of the lower lands can thus pass to and fro through their territory, and that racial intermixture in later times is much easier owing to various economic factors than before the nations were so intimate one with another, is there any reason to doubt that the Ossetes, open to these outside influences which the other tribes on account of their isolation were denied, have not been thereby affected? Racial intermixture with *outside* populations is possible. Jews are abundant here, and among the Ossetes many Jewish features occur. Such admixture is certainly destructive to blondness. Perhaps Mongol and Armenian influences, as well as those of the Russian Slavs and Tartars in the north, have lessened the light characteristics. All these peoples, it should be remembered, are dark; as pigmentation is far more susceptible of change than head-form, we can conceive of this change in blondness occurring without destroying other characteristics.

It will be noticed in the preceding discussion that we have made but slight reference to the most reliable of all physical criteria — head-form. In distinguishing the Mediterranean from the Nordic race, it affords us no assistance, as the index is the same in both cases. We know that the Ossetes are longer-headed than the other Caucasians, and we believe long-headedness, in conjunction with the other two traits, to be their fundamental feature; yet we found them well toward the top of the dolichocephalic list. May not the attenuation of their long-headedness be due to the same cause as the gradual obliteration of their blond traits, since the outside people — Jews, Armenians, Tartars, and Slavs — are all round-headed? The Ossetes are "in transit," geographically as well as physically, from a higher to a more degenerate type. If they have degenerated from the physique or morale of former times, as they seem to have done, cannot the vicissitudes of their history help us to appreciate that fact? For although they appear to be a people whose physical characteristics are in process of attenuation, whose blondness is being washed out, whose head is becoming squared and height depressed, yet they retain enough of the noble features of race to attest their origin.

We have tried to approach every side of the question, even at the risk of becoming tedious. In conclusion, as a general summary, let us state the following propositions:

The Ossetes, as held by historians, are the remnant of the tribe of the Alani. They were primarily a long-headed, tall, blond people, which characteristics they retain in some measure at the present time. Driven to the Caucasian mountains by barbaric invasions, they occupy the only available locality — the Dariel pass — as the more remote mountain regions were long since occupied by Alpine people. By racial intermixture with later arrivals, the Ossetes are gradually losing the primary elements of blondness and long-headedness.

The Alani were a tribal division of the Finns who occupied the southern part of Russia north of the Caucasian mountains. Their customs and institutions show them to be of ancient origin, to have been in a state of political independence and with distinct physical characteristics before the appearance of any other racial type in these regions.

Lastly, the Finns are a branch of the great Nordic race occupying the whole of Russia and northwestern Europe from prehistoric times. Their remains are found on archeological sites and their descendants are represented by the Lithuanians, Esths, Tchuds, and the Great and White Russians of the present time.

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ELLIS ISLAND, NEW YORK.

SOME OUTLINES OF ABORIGINAL CULTURE IN THE SOUTHEASTERN STATES

By FRANK G. SPECK

In the course of linguistic and ethnologic researches in behalf of the Bureau of American Ethnology and the American Museum of Natural History among the Yuchi Indians now in Indian Territory, it was found necessary to extend investigations over their immediate neighbors, the Creek Indians of Taskigi town, after certain analogies in culture had presented themselves. In following up matters among these two groups which were fairly typical of the former inhabitants of southeastern United States, incidental data were obtained from other tribes of the Creeks and the Chickasaw; so that taking it together with what has been published on the region, it was considered sufficient to make at least a preliminary classification of cultural phases.

The surviving members that form this group, without regard to their linguistic affiliations, are the Creek (Maskogi) tribes, the Yuchi, Cherokee, Choctaw, and Chickasaw, while the now defunct Siouan fragments in the Carolinas probably fell within the limits as well.[1] Comparatively speaking, nothing is known of many of these tribes, and little more of some of the others. Most of them have not yet been studied or else exist in such a state of disintegration as to be unimportant.

The narratives of De Soto, given us by the Knight of Elvas, Ranjel, Garcilasso de la Vega, and Biedma,[2] and the accounts by De Bry, Le Moyne,[3] Bossu,[4] Du Pratz,[5] and Lawson,[6] are about the

[1] Mooney, Siouan Tribes of the East, *Bulletin of the Bureau of American Ethnology*, 1894.

[2] *Narratives of the Career of Hernando de Soto in the Conquest of Florida*, edited with an Introduction by Edward Gaylord Bourne; Trail Makers Series, New York, 1904. Garcilasso de la Vega, *Histoire de la Conquête de la Floride*, Leide, 1731.

[3] *Larger Voyage*, pt. II, Florida.

[4] *Travels through Louisiana*, Lond., 1771.

[5] *Histoire de la Louisiane*, Paris, 1758.

[6] *A New Voyage to Carolina*, Lond., 1709.

earliest sources of ethnologic information, and they are fragmentary enough. Then follow Adair,[1] in whose extended arguments some important facts are incidentally obtainable, and Bartram,[2] Schoolcraft,[3] Catlin,[4] Lederer,[5] Hawkins,[6] and Woodward,[7] who afford much valuable information on sociological and religious subjects. Morgan[8] has recorded lists of social divisions, which have subsequently been challenged. Gallatin,[9] Byington,[10] and Gatschet,[11] have published material on languages of the region, and Gatschet mentions visits to remnants of the smaller stocks and tribes. The later works of Gatschet[12] give us valuable data on the whole group, while the manuscripts of W. O. Tuggle[13] and James Mooney's[14] works on the Cherokee are about the only detailed collections of myths that are thus far available. Material culture has been well treated by C. C. Jones,[15] while the archeologic researches of Moore[16] and Holmes[17] stand as the most complete of their kind. A few other articles contain material on special tribes.[18]

[1] *History of the American Indians*, Lond., 1775.

[2] *Travels through North and South Carolina*, Phila., 1791.

[3] *Indian Tribes*, vols. I–VI, Phila., 1851–57.

[4] *North American Indians* (1832–39), Lond., 1866.

[5] *Discoveries of John Lederer* (1669–70), Lond., 1672; reprinted, Rochester, N. Y., 1902.

[6] Sketch of the Creek Country (1798–99), in *Georgia Hist. Soc. Coll.*, 1848.

[7] *Reminiscences*, 1842.

[8] *Ancient Society*, New York, 1877.

[9] In *Transactions and Collections of the American Antiquarian Society*, vol. II, Cambridge, 1836.

[10] *Grammar of the Choctaw Language*, Phila., 1870.

[11] In *Science*, vol. IX, 1887, p. 404 et seq.

[12] *Migration Legend of the Creek Indians*, vol. I, Phila., 1884; vol. II, St Louis 1888.

[13] *Creek Myths*, in the archives of the Bureau of American Ethnology.

[14] Myths of the Cherokee, *Nineteenth Rep. Bur. Am. Ethnology*, pt. I, 1900; Sacred Formulas of the Cherokees, *Seventh Rep. Bur. Am. Ethnology*, 1891.

[15] *Antiquities of the Southern Indians*, N. Y., 1873.

[16] In *Journal of the Academy of Natural Sciences of Philadelphia*, X, XI, XII.

[17] Aboriginal Pottery of Eastern United States, *Twentieth Rep. Bur. Am. Ethnology*, 1903.

[18] MacCauley, Seminole Indians of Florida, *Sixth Rep. Bur. Am. Ethnology*, 1888; Buckner on Choctaw burial, *Am. Antiq.*, II, 55, 1879, Watkins, ibid., XVI, 262, 1894; Mooney, Cherokee Ball Play, *Am. Anthropologist*, III, 105, 1890; Gatschet, Yuchi Language, *Am. Antiq.*, II, 77, 1879; Gatschet, Some Mythic Stories of the Yuchi Indians, *Am. Anthropologist*, VI, 279, 1893; Hagar, Cherokee Star Lore, *Boas Anniversary*

The Creeks and the Yuchi appear to have most prominently the characterizing features of the group, for on the borders of the area mutual transmission of cultural elements seems to have taken place with outside groups. Hence among the Chickasaw and the Choctaw dissimilarities with the more easterly members are frequently met with, though one cannot hesitate to place them in the Southeastern group. The underlying concepts of their practices are in conformity with the type, despite some external points of difference. Incidentally, when more is known of the Southeastern area, it may become advisable to subdivide it into an eastern and a western branch. Provisionally, then, its geographical limits may be set between the Atlantic ocean and the Mississippi river, from the Gulf of Mexico northward to the affluents of the Ohio river and somewhere in the state of Virginia.

Summarizing the region as regards social divisions, quite a little homogeneity is found. The social unit throughout is the clan, a maternal, exogamic, and totemic clan tracing direct descent from the totem, which is usually an animal. In some parts of the area, however, clans occur which are mere localized communities with descriptive non-totemic names, as seen in the Choctaw, Chickasaw, and Cherokee. The totem animal is regarded as the guide and benefactor of all the members of its clan. When the social units are assembled for council or ceremony, they encamp in the form of a symbolic square laid out in conformity with the cardinal points. This feature corresponds to the camp-circle of the prairie tribes. In this grouping together of the clans a certain order of precedence is maintained and privileges in the nature of civil or religious offices are inherited by certain clans. As examples of clan hegemony in different villages, we find that the Bear clan has precedence and supplies the town chief among the Yuchi, the Eagle clan among the Tukabaxtci, the Bear in Taskigi town, the Beaver in Tulsa, the Panther in Lutcapoga, and so on.

Volume, 1907; Halbert, general notes on Choctaw, *Am. Antiq.*, XV, 146, 1893; XVI, 215, 1894; XVII, 157, 1895; also in *Pub. Miss. Hist. Soc.*, I–III. Some notes on the Chickasaw are given by Warren in *Pub. Miss. Hist. Soc.*, VIII, 543, 1904; also by Speck in *Jour. Am. Folk-lore*, XXI, no. 76, 1907. Pickett, *Hist. Ala.*, I, 54 et seq., 1851, contains a general review of Southern Indians, as does Brinton, *Notes on the Floridian Peninsula*, Phila., 1859.

Now, in the eastern members of the group, the Creek, Yuchi, and Cherokee, this clan assemblage is a permanent thing and constitutes the town or tribe. Here the square also is permanent and becomes a public shrine with a definite religious symbolism attached to it. All ceremonies take place within it and a council house is situated near by. The Yuchi afford a good example of this; their town square symbolizes a rainbow. It was laid out in colors with sand and ashes, while on its edges permanent sheds were erected for the accommodation of spectators, and public officials had charge of all ceremonies enacted there. It is here furthermore characteristic that the clans were subordinated to the town organization. The development of such a process of alliance gave rise to the organization known in history as the Creek Confederacy, or Creek Nation. The number of clans in the various tribes of the Southeastern group is fairly large. Complete lists from each would probably show at least twenty. In the western section phratries occur, and among the Chickasaw the chief religious festival is an esoteric affair of the phratry or half-tribe.

As a part of a very widespread custom personal names are here found to indicate clan identity, the first name being either the actual name of the person's totem, as in some of the Creek tribes, or the name of an ancestor in the clan, or one chosen by a clansman descriptive of some trait of the clan. Social rank is indicated also by facial painting, the designs of which belong to the phratry, as among the Chickasaw, or to another sort of paternal social division which exists among the eastern branches. It appears most typically among the Yuchi where the divisions are two, called Chief and Warrior, in which certain official positions and personal property are inherited through the father. This form of social classification took a peculiar development among the Natchez, where a certain class of Suns was found.

A few negative features perhaps worth mention here are the absence of secret clan societies and, at the present time at least, the lack of strict taboos regarding the totem animal. The absence of organized legislation in the town life is also noticeable.

The most prominent feature in the ceremonial culture of the Southeast is an annual ceremony of several days' duration, performed

about the time of harvesting the corn crop. During this time ceremonial observances of different sorts take place in succession, observances which are thus carried out but once a year. The ceremony includes fasting, public kindling of the new fire, scarification, and purgation by an emetic of all the males of the tribe or the shamans, and ceremonial games. There are also various dances which are performed mostly after dark in the town square. The elements of worship in the dances of the whole region are the propitiation of evil spirits (either animal or human), thanks to beneficent agencies and totems, and prayer for their good will and help. These dances are imitative, and the accompanying songs consist in part of words and in part of meaningless syllables. The manner of dancing is in single file, following a leader who bears the burden of the song, the followers joining in a responsive stanza at certain regular periods. The movement about the fire, in all cases thus far observed, is contra-clockwise. Aside from performances of worship, the annual ceremony marks the annulment of all personal disputes. Thus it begins a new period of tribal harmony, purity, and prosperity.

In addition to the aforementioned religious ideas of the annual ceremony in the eastern region, particularly among the Yuchi, its enactment is in obedience to commands of the Sun deity, who conditioned their prosperity upon its continuance. In the case of the Chickasaw more prominence is given to a shamanistic ceremony of the phratry than to the harvest rites.

Some of the ceremonial practices characteristic of the Southeast may be traced directly across the southern plains westward to the Pueblo group. Among the Arapaho[1] and the Wichita,[2] in the pueblos of Sia,[3] Oraibi,[4] and Mishongnovi,[5] for instance, the rites of fasting and taking the emetic are confined to the priests of the ceremony,

[1] Dorsey, The Arapaho Sun Dance, *Field Columbian Museum Publication No. 75*, Chicago, 1903.

[2] Dorsey, *Mythology of the Wichita*, Carnegie Institution, Washington, 1904, p. 16.

[3] Stevenson, The Sia Indians, *Eleventh Rep. Bur. Am. Ethnology*, 1894, p. 87.

[4] Voth, Oraibi Summer Snake Ceremony, *Field Columbian Museum Publication No. 83*, 1903, p. 347.

[5] Dorsey and Voth, Mishongnovi Ceremonies, *Field Columbian Museum Publication No. 66*, 1902, pp. 159–261; Fewkes, Tusayan Snake and Flute Ceremonies, *Nineteenth Rep. Bur. Am. Ethnology*, 1900, p. 976.

in this respect offering a contrast to the area under discussion, where the emetic is taken by all the men of the village.

In nearly every tribe we have mention of a much favored beverage, the "black drink," used also as an emetic by the men in public gatherings. This drinking is attended by a prolonged cry from the lips of the server, at the termination of which the draft must be finished.

Chief among the ceremonial games of the Southeast are the chungke-game, and the ball game which is played here with two sticks, showing a contrast to the same game in neighboring areas where it is played with a single stick. A fairly elaborate ritual accompanies the ball game with little variation in the different tribes of the group. Musical instruments are the pot-drum, log-drum, hand-rattle, knee-rattle, and flute.

Greater homogeneity underlies the shamanistic practices of this region than some of the other cultural phenomena. Disease is attributed to animal spirits or to human conjurers, and the duty of the shaman is to cause the trouble, in the form of a spirit, to leave the person and enter another animal. His practice consists in the preparation of steeped herbs into which he blows through a cane-stalk. In periods of intermission he chants the song-ritual for that particular disease. In the western section the transfer, by sale, of the shamanistic ritual is common.

Some widespread features of domestic life are found in the group, such as the menstrual seclusion lodge, the numerous proscriptions in the diet and behavior of the father of a newborn child, the initiation of youths, and the remarkably unelaborate marriage compact. The same in general is true of beliefs regarding death and burial. The souls are plural and have different functions, one always traveling for a four days' journey to a spirit realm, having to pass an obstacle before safely reaching its destination. During this period of temporary change, acts are performed by the relatives at the grave and provisions are left there to aid the departing soul. A change has taken place in the manner of burial in the entire region since the early times. The elaborate rites connected with cleaning the bones of the dead and reburial in a special clan repository, which formerly characterized the Southeast, have disappeared.

The same is true of burial beneath the floor of the lodge. Nowadays burials are made in the open and small houses are erected there instead. These matters evidently survived latest among the Choctaw and the other western members.

Not much of the former industrial and economic life of the Gulf tribes has survived the changes wrought by Europeans. The natives led a rather sedentary life, noticeably reflected in their religious and political culture, cultivating chiefly corn, melons, potatoes, beans, and tobacco, and storing them away in high cribs elevated on posts. Yet hunting and fishing occupied much of their time. The latter was carried on by poisoning the streams with certain roots,[1] so that the stupefied fish could be secured by means of bows and long-shafted arrows. Their only domestic animals were dogs which could not bark, and these were their companions on the hunt. Fire was produced by drilling. The pottery industry flourished, smoking pipes of clay occurred, and baskets and sieves were constructed of cane and splints. Feather embroidery and the art of weaving mantles of mulberry bark fibers were found by the first explorers, but have long been obsolete. In the earliest times cutting implements were made of stone. Sheet copper, however, was used for the manufacture of some implements and ornaments. Wooden ladles, mortars and pestles, and gourds were the chief household utensils. Houses consisted of bent poles covered with matting or bark in the higher inland regions, while palmetto structures raised above the ground were found in the semitropical districts, like those still in use among the Florida Seminole. Sometimes the sides were plastered with clay. Weapons were spears, simple bows and arrows, and clubs. The employment of the blowgun in hunting, together with the use of hammocks as baby cradles instead of cradle-boards, a peculiar storage scaffold in one corner of the house, the previously mentioned method of poisoning fish, and evidences in ceramic art[2] are on the whole very suggestive of waves of cultural transmission into this region from the Antillean

[1] A species of *Tephrosia* was most commonly used.

[2] Caribbean Influence on the Prehistoric Art of the Southern States, *Am. Anthropologist*, VII, 71, 1894.

or Caribbean area.[1] Tattooing of the body was quite generally practised, and from the accounts of early explorers we learn of head-flattening among the Natchez, Choctaw, Chickasaw, and Chitimasha, and the Waxhaw farther eastward. There were, no doubt, other tribes here which did the same.

Information on the decorative art of the Southeast up to the present time comes from only one tribe, the Yuchi. Of them it seems to be true that geometrical designs, such as mountains, rivers, clouds, the milky way, snake, and centipede occur in bead embroidery. Designs of the sun and moon are also found on the rims of pottery used in the ceremonies of the modern Yuchi.

In concluding this attempt to summarize some of the characteristics of Southeastern culture a difficulty presents itself — that of separating the native Indian elements of mythology from a heterogeneous whole that has encumbered itself with many foreign accretions. Some positive results, however, are forthcoming. First mention is of the mythical animals, the cosmic creative agencies, one of which, the Crawfish, brings up some earth from the bottom of the universal watery waste. From this the present earth is formed. These animal beings then cause the existence of light, darkness, and mountains. The culture hero is usually identified with the sun. He is the creator of peoples and the originator of their social and religious culture, and apparently is the chief object of worship. Among the Creek tribes the culture hero is a four-fold personality, "The Men of Light." Myths descriptive and laudatory of the totemic ancestors are abundant and varied. The tricksters of the region are the rabbit in the whole eastern area, and the fox nearer the Mississippi. The tricksters are transformers only in a minor sense and have nothing to do with the culture hero. Some form of the migration legend is everywhere present so far as our material goes. But it is particularly characteristic of the Maskogians who agree in tracing their *terminus a quo* to a point somewhere west and north of their former habitat. The great body of tales, however,

[1] Compare im Thurn, *Among the Indians of Guiana* (Lond., 1883), for use of blowpipes (p. 246); houses plastered with clay in savannah regions of Guiana (p. 205); fish poisoning (p. 233), where a plant of the same genus (*Tephrosia*) as that used by the Creeks and the Yuchi is employed.

is centered about animal exploits and how the animals acquire their peculiarities. The chief incidents seem to be part of the large category common to nearly the whole of America, known by such general names as the magic flight or obstacle myth, the theft of fire, the foot-race between two rivals, and the origin of death as the result of someone's mistake. In the same class come other well-known elements, as the unsuccessful imitation of the host, the journey to spirit land, the invulnerable man-eating monster, variants of the idea expressed in the tar-baby story, the magical increase of food, and finally the escape from the belly of a water monster.[1]

HACKENSACK,
NEW JERSEY.

[1] The linguistic and ethnological results of several seasons of field research among the tribes of the Southeast, particularly the Yuchi, will, it is hoped, be published later on, giving in more specific detail what is here presented in a very brief condensed form.

THE ADZE AND THE UNGROOVED AXE OF THE NEW ENGLAND INDIANS

By CHARLES C. WILLOUGHBY

Under the unsatisfactory term *celt* are included two distinct classes of stone implements — adze blades and ungrooved axe or hatchet blades. In the former class the cutting edge was at right angles to the haft, while in the latter class the edge was parallel to the haft. The ungrooved axe, as a rule, is readily distinguished from the adze by its symmetrical form (compare pl. XI and XII).

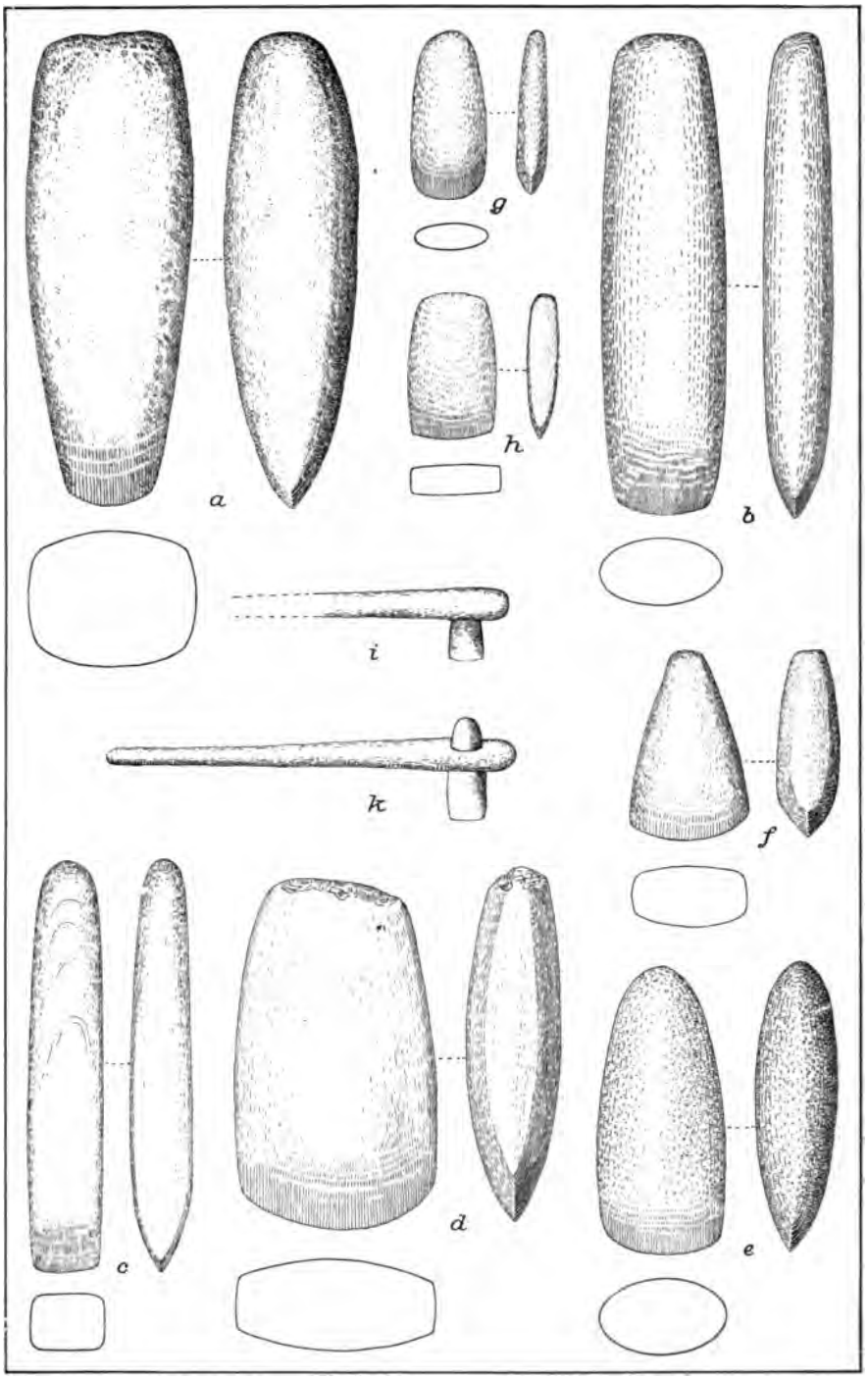
Ungrooved axes are distributed throughout a large portion of America, and are found also in many other sections of the world. So far as known the methods of hafting were similar in the various regions. In central Europe the smaller stone blades were usually inserted into a fore-haft of antler which was fitted to a hole or perforation in the wooden haft. Antler fore-hafts were sometimes used by the Eskimo and probably also by other North American tribes for holding adze blades. The larger European stone axe blades of the "celt" type were set directly into the handle. This was the method usually followed in North America.

Five prehistoric ungrooved axes from the Algonquian and Iroquoian regions, in their original wooden hafts, are known to the writer. Two of these are in the National Museum, the best preserved of which is from Richfield, Genessee county, Michigan, and is illustrated by Wilson.[1] The other is from the vicinity of Syracuse, New York. A third example is in the American Museum, New York City; it was obtained from the bed of a brook at Thorndale, Dutchess county, New York.[2] A fourth specimen, also from New York, is described and figured by Beauchamp.[3] The fifth example was found in the Ohio river opposite Elizabethtown, Harding county, Illinois, and is preserved in the Missouri Historical

[1] Thomas Wilson in *Report U. S. National Museum*, 1896.

[2] Figured in *American Anthropologist*, N. S., 1906, VIII, p. 6.

[3] W. M. Beauchamp, *Polished Stone Articles of the New York Aborigines*, fig. 1.



UNGROOVED AXE BLADES OF STONE; NEW ENGLAND. ONE-THIRD NATURAL SIZE

a, *b*, *f*, *g*, *h*, Massachusetts; *c*, Maine; *d*, Vermont; *e*, New Hampshire. *a–h*, Peabody Museum, Cambridge. *i*, *k*, Probable Methods of Hafting.

Society's collections. The blade of this axe is set into a hole that does not perforate the handle as is the case with the other specimens.

The two methods of hafting the above axes are shown on plate XI, *i*, *k*.

Ungrooved axes were probably not uncommon among the New England Indians and adjacent tribes during the early colonial period. Champlain saw stone hatchets in general use in Massachusetts in 1605. He says: "They have no others except some few [of iron] which they received from the savages on the coasts of La Cadie, who obtain them in exchange for furs."[1] Wood[2] refers to the shaping of the outside of dugout canoes with stone hatchets; but neither of these writers specifies whether these implements were of the grooved or the ungrooved type.

From the standpoint of a European it would seem that a wedge-shaped stone blade set into a hole or perforation in a comparatively narrow handle would not be a very serviceable implement. The pressure of the blade in use would seem to have a tendency to split the haft. It should be borne in mind, however, that in the choice and use of wood, the Indians had acquired the highest knowledge of its natural properties and its adaptability to their simple arts. Handles of this form doubtless served all necessary purposes. It should also be remembered that in felling large trees and in general woodworking fire was often an important agent, stone axes and other implements being used to cut away the charred portion. Trees can be felled with stone axes without the aid of fire, as the writer has proved by experiment.

Of course axes of the ungrooved variety were less serviceable in heavy work than those with grooves (the form used in the above experiment), the hafting of the latter being better suited to the greater strain demanded.

The lighter ungrooved axe was probably employed both as an implement and a weapon. Johnson, in his *History of New England* (1654), refers probably to this form as follows: "They had a small number of Mawhawkes [tomahawks] Hammers, which are made of stone, having a long pike on one side, and a hole in the handle

[1] Champlain, *Voyages*, Prince Society, II, p. 73.

[2] William Wood, *New England's Prospect*, Boynton edition, p. 96.

which they tye about their wrists."[1] Gookin refers to "tomahawks made of wood like a pole axe, with a sharpened stone fastened therein."[2] Williams says trees were felled with a "stone set in a wooden staff."[3]

Ungrooved axe blades occur less frequently in New England than those of the grooved variety. They are far less common than adze blades. Nearly all are surface finds. They have not been found in the older graves, although adze blades are very common in them. They occur occasionally with adze blades in the shell-heaps, which are probably of Algonquian origin. They are usually made of a compact metamorphose slate of fine grain, although sometimes coarser stones are used in their manufacture.

Plate XI illustrates typical forms from various sections of New England, a front and side view and a cross-section of each specimen being given. All the blades illustrated on this plate are polished over their entire surface with the exception of *e*, which is polished near the cutting edge only.

The Stone-bladed Adze

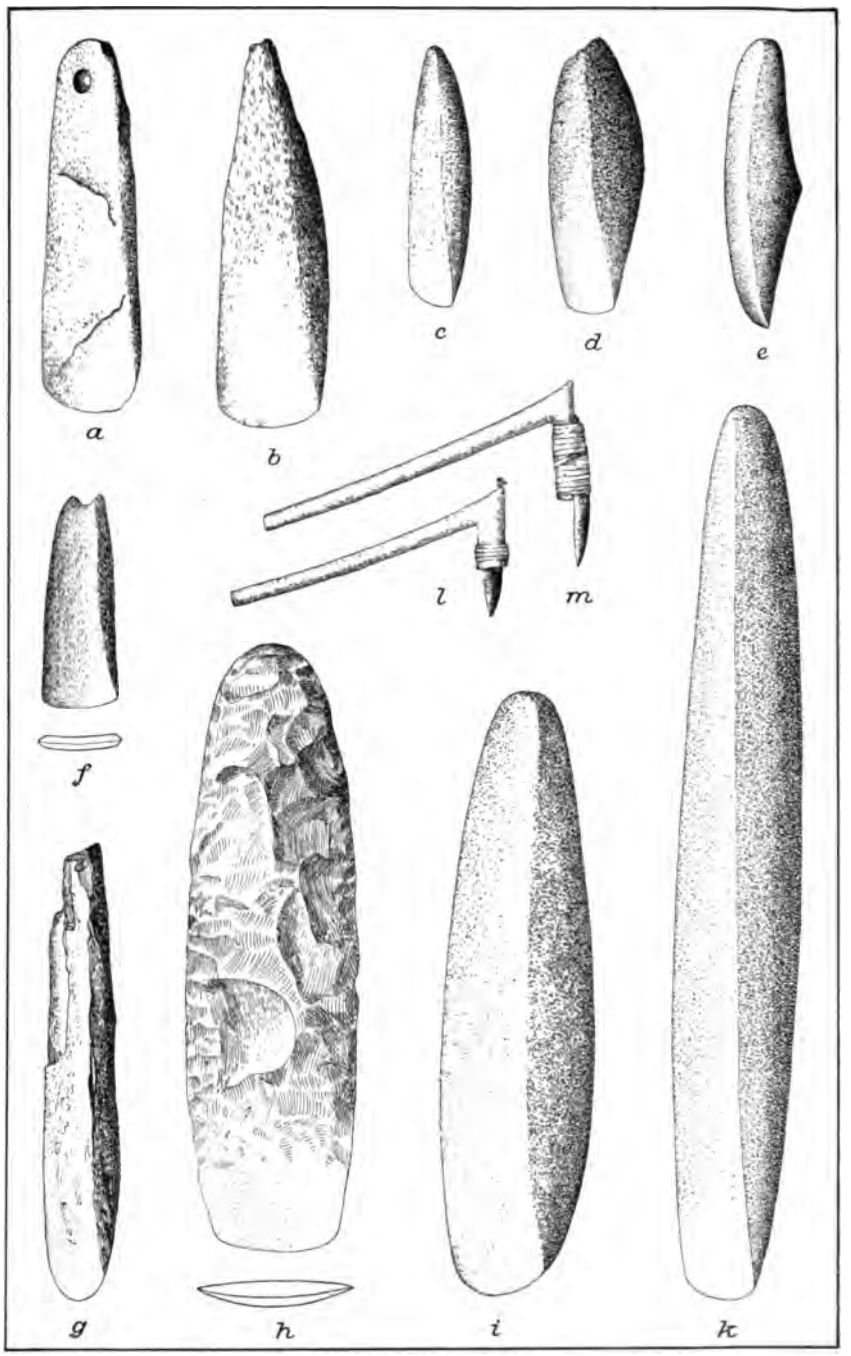
The stone-bladed adze reached a higher development in New England and the adjacent region than in other sections of America, and it is doubtful if in any other part of the world in so restricted an area a greater variety can be found. The material of which the New England blades are made is usually a compact altered slate of fine grain, although unaltered slates and a few other varieties of stone are occasionally used. In general, these implements were roughly shaped by chipping, then brought to the required form by pecking, only that portion near the cutting edge being ground smooth. A few specimens are polished over their entire surface. Blades of chipped flint or jasper ground to a cutting edge (pl. XII, *h*) occur rarely, and a few of native copper have been found (pl. XII, *f*).

The cutting edge of these implements varies from a straight line to a half-circle, corresponding in this respect to the different forms

[1] Edward Johnson, *A History of New England*, p. 114.

[2] Gookin, Historical Collections, *Mass. Hist. Coll.*, 1st s., repr. 1859, vol. I, p. 152.

[3] Roger Williams, *Key into the Language of America*, R. I. Hist. Coll., vol. I, p. 130.



ADZE BLADES; NEW ENGLAND. ONE-THIRD NATURAL SIZE

a–e, *g–k*, Stone; *f*, Copper. *a*, *b*, *d*, *f*, *g*, Maine; *c*, *e*, *h*, *i*, *k*, Massachusetts. *a–d*, *f*, *g*, *i*, *k*, Peabody Museum, Cambridge; *e*, Peabody Museum, Salem; *h*, Collection of L. E. Wells. *l*, *m*, Probable Methods of Hafting Blades *b* and *k*.

of the modern steel chisel and gouge. Adze blades are distinguished from the symmetrical ungrooved axe by their bi-symmetrical form. Hafts for primitive adzes are made usually of a limb of a tree and the adjoining portion of a larger limb or trunk (pl. xv, *k*). Occasionally an antler fore-haft is added. In practically all New England blades which are without a groove or knob to assist in holding the lashings in place, the upper half or two-thirds is wedge-shaped, the more carefully formed specimens tapering uniformly toward the top or point farthest from the cutting edge. The reason for the wedge-shaped upper portion is obvious, for when lashed to the haft, as shown in plate xii, *m*, each stroke of the adze tends to wedge the blade more firmly to the handle. It is doubtful if the implements with knobs or transverse grooves were as rigid in relation to the haft as were the better class of wedge-shaped specimens. In the ruder examples the upper portion is frequently roughly chipped and shows little or no pecking. Such specimens may have been inserted into a socket in the haft, as shown in plate xii, *l*. The heavy round-topped example (pl. xiv, *i*) has a nearly circular cross-section. The inner side, however, is somewhat flattened, and the cutting edge is very narrow. This is a distinct type, and is found principally in eastern Massachusetts. One would naturally infer from the shape of the upper end, which is well fitted to the hand, that the implement was used without a handle. Some blades of this type, however, have a broad shallow groove at the back for the haft lashing similar to that shown in plate xv, *f*, but broader and much more shallow. This fact, taken in connection with the somewhat flattened face and tapering upper portion of the example illustrated, indicates that all blades of this form were probably hafted.

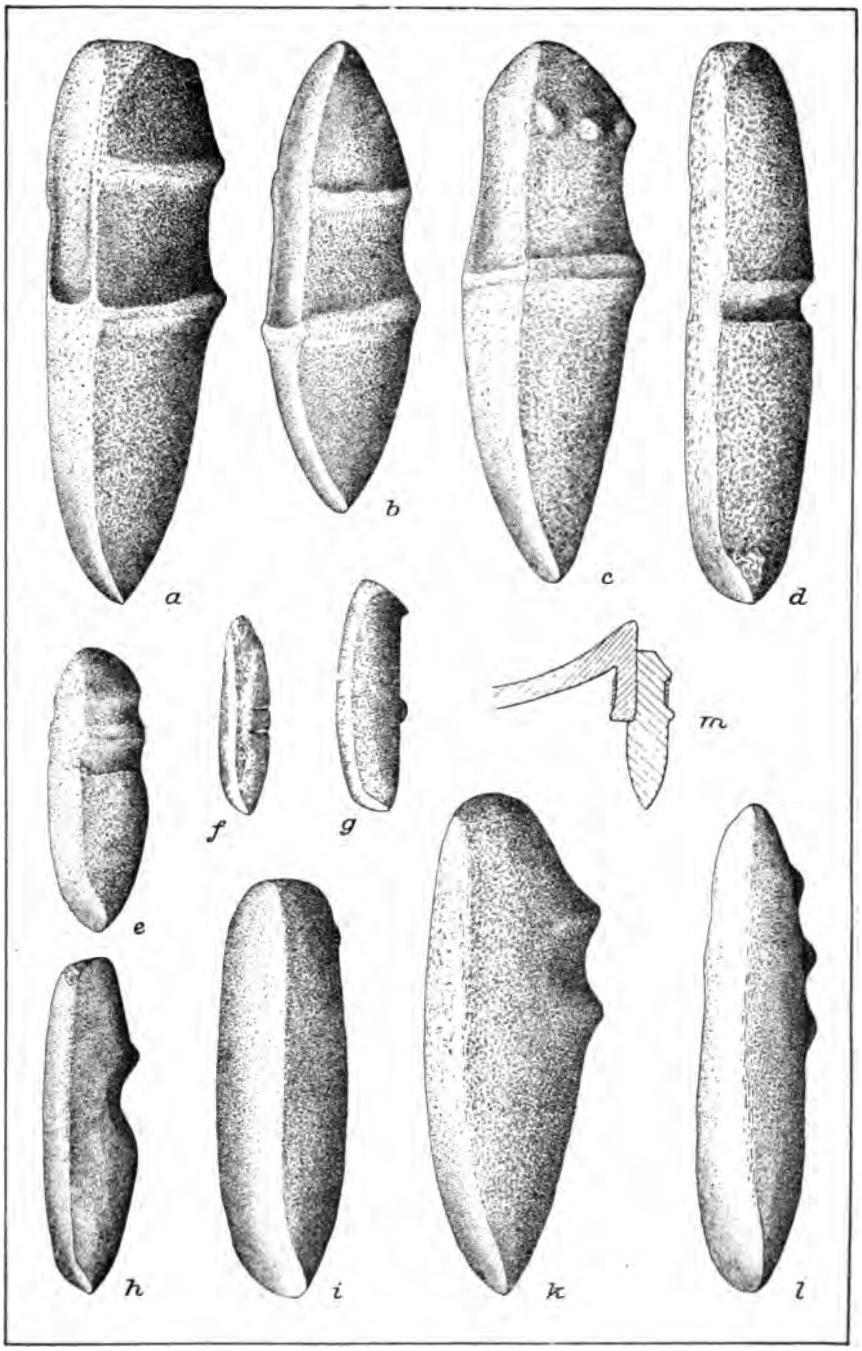
Double-edged blades are very rare. The one illustrated in plate xiv, *g*, is from Oldtown, Maine. That shown in *h* of the same plate is from Orland, Maine. These were probably hafted in the same manner as blades with a single edge, for they could easily be loosened and slipped from the lashing and reversed as occasion demanded. Occasionally an implement is found which apparently has been made over. The original edge having for some reason proved unsatisfactory, the blade was reversed and a new cutting edge was made upon the opposite end. The function of the knob,

transverse groove, and enlarged upper portion of a blade is of course to prevent slipping from the lashings when accidentally loosened. The various ways by which this was accomplished are shown in plates XIII and XV. The combination of the wedge form and the turned back or enlarged upper portion is shown on plate XV, *a–d*. In the latter specimen a portion of the face above the groove has been cut away to receive the haft, the lower edge of which rested against the ends of the slightly raised ridges upon either side of the groove. In some examples the upper portion has a groove into which the haft is fitted, the lower edge of its face resting against the transverse ridge thus formed (pl. XIII, *a*, *b*, *c*, *m*). This assures a firmness not easily obtained by other means.

Examples of the transverse groove as a means of securing the cord or thong are shown on plate XIII, *a–f*, and plate XV, *f*; the combined groove and knobs, on plate XV, *i*; and the single, double, and triple knob, on plate XIII, *i*, *k*, *l*. Forms similar to *k* occur among the Indians of the Northwest coast. The example shown on plate XV, *e*, has four knobs, two on each side.

In the New England adze the curvature of the cutting edge above a certain degree is produced by longitudinal grooving. In some examples this groove is very short and is produced principally by pecking, the lower portion only being ground (plate XV, *b–i*). In other specimens the groove extends the entire length of the tool, as in plate XIV, *a–c*, which is an extreme type. There is a large series illustrated by the example shown on plate XIV, *d*, in which the upper portion of the groove is shallow, the lower half being deeper and broader as it approaches the cutting edge. A considerable part of the upper portion of the groove in such specimens was probably made by the grinding stone in repeatedly sharpening the implement.

In some examples (pl. XIV, *a–c*) the groove forms a part of the original construction of the implement, but it is questionable if it had a function other than that common to the groove in the steel gouge, which is to facilitate regrinding and to allow the chips or shavings to pass unobstructed. In *c*, plate XIV, apparently more than half of the original length has been ground away in resharpening. The countersunk hole near the upper end of the groove does not perforate the implement. Blades with perforations (pl. XII, *a*) are very rare. The lashing was probably passed through the hole and tied.



STONE ADZE BLADES; NEW ENGLAND. ONE-THIRD NATURAL SIZE

a–k, Massachusetts; *l*, Maine. *a*, *d–k*, Peabody Museum, Cambridge; *b*, Peabody Museum, Salem. *c*, Phillips Academy, Andover; *l*, National Museum. *m*, Probable Method of Hafting Blade *a* (cross-section).

While all the types illustrated on plates XII–XV were probably designed as adze blades, it is not improbable that some of them may have been used occasionally without a haft. A large "gouge" in the Peabody Museum at Harvard, similar to that shown on plate XIV, *a*, has upon its back a space about six inches long and half an inch wide which has been worn and highly polished. This was apparently produced by continued rubbing upon a hard but fine-grained surface such as charred wood. Only a small portion of the implement was subjected to this continued rubbing. The same effect could be produced by using the tool without a haft in hollowing wooden mortars and bowls with the aid of fire. Another implement of this class shows a similar polished surface on the lower portion only, below the space naturally covered by the lashings. A few of the very small examples not shown in the illustrations may have been attached to straight handles and used as chisels.

The writer has found but few references to the use of the stone-bladed adze by American tribes, although the older museums have good series of these implements in their original handles from the Eskimo and a few from the Indians of the Northwest coast. The superiority of the iron blade to that of stone led to its early introduction by these people. Axes were unknown among the Eskimo until introduced by Europeans, and the earlier trade hatchets were nearly all rehafted as adzes. Nelson writes that stone adzes "are very skilfully used by the Eskimo for hewing and surfacing logs and planks, although at the present time they are being displaced by iron and steel tools obtained from white traders. In the *kashim* on the lower Yukon a plank was seen that was made many years ago by use of a stone adze. It was twenty-five feet long and four or five inches thick. The surface bore so many marks made by the hacking of stone adzes that it looked as if it might have been cut by beavers."[1]

Mackenzie found the primitive adze in use in the Slave and Dogrib region in 1789, and writes: "Their axes [adzes] are manufactured of a piece of brown or grey stone from six to eight inches long, and two inches thick. The inside is flat, and the outside

[1] *Eighteenth Report Bureau of American Ethnology*, pt. I, p. 91.

round and tapering to an edge, an inch wide. They are fastened by the middle with the flat side inwards to a handle two feet long, with a cord of green skin. This is the tool with which they split their wood, and, we believe, the only one of its kind among them."[1] This description would well apply as to form to the type shown in plate XII, *i*, *k*.

A few stone adzes were in use on the Northwest coast in Cook's time, but in that region even at this early period iron had to a great extent supplanted stone for edged tools. I know of no reference by early writers to the use of the stone adze by the New England tribes. It was, however, used by the Algonquians of this region in prehistoric times, and is found in small numbers in their shell-heaps.

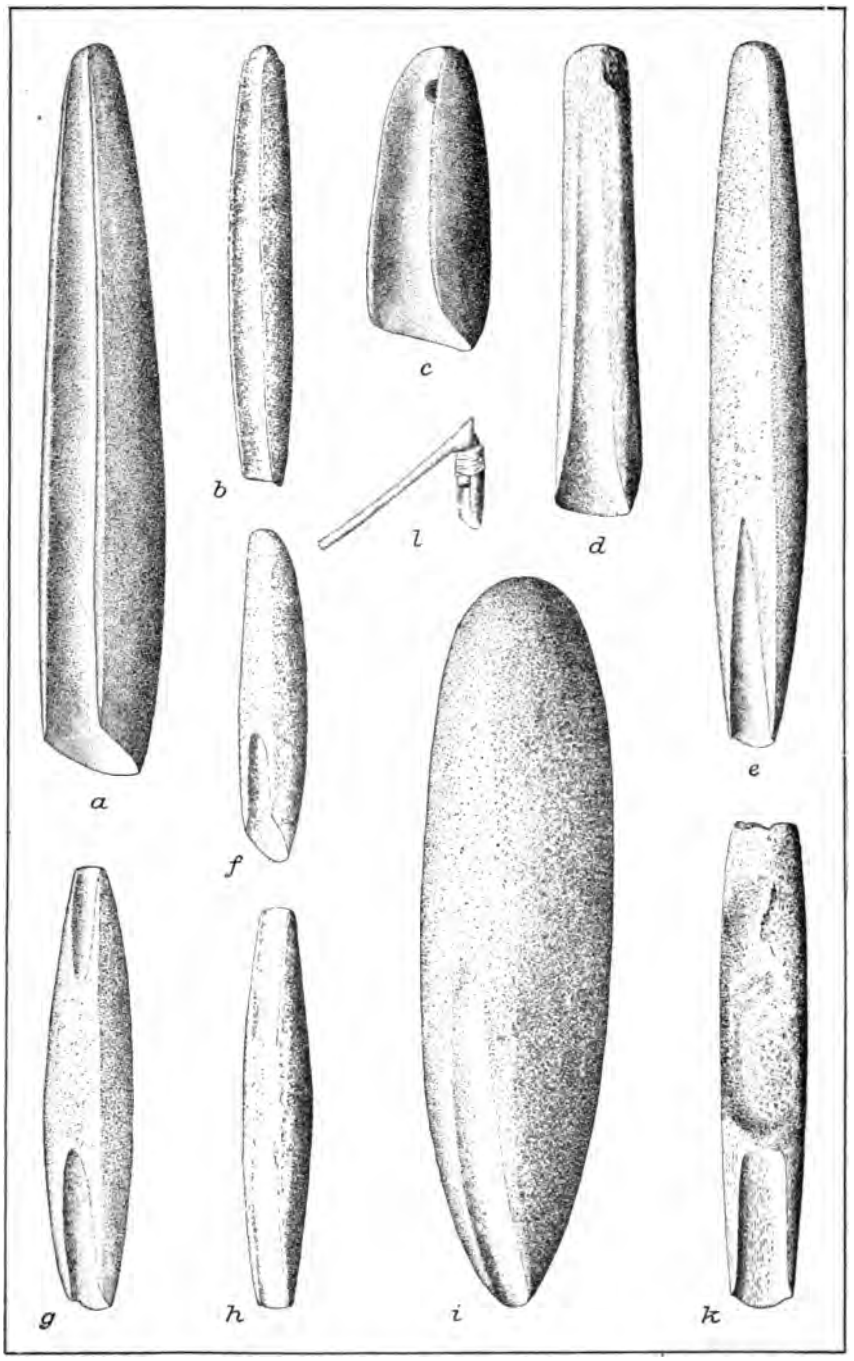
It is doubtful if the adze was used to any great extent by these Indians within the historic period, or that stone blades were replaced by those of iron, as they would have been had these implements been common. Nearly all blades with projections or transverse grooves for securing the lashings are surface finds, and practically all types from the simple straight-edged form to the elaborately finished grooved "gouge" are found under these conditions, which of course furnish little data as to the relative age of the various forms.

Adze blades are rarely if ever found in graves of the historic New England Indians. Blades with straight or slightly curved edges are found in limited numbers in the shell-heaps. Those of the gouge type rarely if ever occur in these heaps, nor does the writer know of an instance of the knobbed or transverse-grooved forms having been found in them. Artifacts in general and especially the potsherds from the shell-heaps indicate strongly that these refuse piles are of Algonquian origin. In the Whaleback mound at Darmariscotta, Maine, one of the largest shell mounds in New England, no essential difference is noticeable between the potsherds found in the upper layers and those taken from a depth of ten or twelve feet. The shell-heaps in general testify that New England was occupied by Algonquian tribes for a very long period.

The ancient burial places in the lower Penobscot region explored by the writer in 1892–1894[2] contained a large series of adze

[1] *Voyages*, quarto ed., p. 38.

[2] Willoughby, Prehistoric Burial Places in Maine, *Peabody Museum Papers*, vol. I, no. 6.



STONE ADZE BLADES; NEW ENGLAND. ONE-THIRD NATURAL SIZE

a, *c*, *i*, Massachusetts; *b*, *d*, *e*, *g*, *h*, *k*, Maine; *f*, New Hampshire. *a*, *g*, Worcester Society of Antiquity; *b*, Maine Historical Society; *c*, *d*, *e*, *k*, Peabody Museum, Cambridge; *i*, Peabody Museum, Salem; *k*, American Museum of Natural History; *f*, Collection of T. J. Eastman. *l*, Probable Method of Hafting Blades *a–c*.

blades. In nearly every grave had also been placed one or more pear-shaped pendants and a set of fire stones (pyrites). The latter had undergone chemical change and left spots of iron oxide upon the blades which lay in contact with them. Finely polished slate projectile points also accompanied many of the burials. All bones had become wholly disintegrated. A considerable number of these graves were very shallow. Similar cemeteries occur in various sections of Maine, and a large number of implements have been turned out by the plow. No pottery has been taken from these ancient graves. The characteristic forms of polished slate points and certain types of gouge-shaped blades obtained from these cemeteries seem to be confined to northern New England, New Brunswick, Nova Scotia (?), and Newfoundland. These peculiar forms are not found in the shell-heaps. Evidence is accumulating which seems to indicate that the above burials may be pre-Algonquian. A series of implements collected for the Peabody Museum during the last summer by Mr Owen Bryant at Notre Dame bay, Newfoundland, the heart of the historic Beothuk region, strengthens this theory.

From the results of the exploration of the ancient burial places at Bucksport and at Orland, Maine, considerable can be learned of the relative number, sizes, and types of adzes apparently owned by individuals. From one to seven blades were taken from each of thirty-two of the fifty or more graves explored. In several instances but one blade was found in a grave and there seems to have been no uniform choice as to form in such cases. Some were large with slightly curved cutting edge, others of medium size or small, both the straight edged and the curved gouge forms being represented.

When two implements of a class were owned by an individual, in two instances the pair consisted of a large and a small blade of the gouge type. In the third instance the grave contained two blades with a straight edge, and in the fourth the pair consisted of a blade of each type.

In each of the three cases where four blades were found in a grave, two were of the gouge form and two had the straighter cutting edge. Two graves contained six blades each. From the first were taken four of the gouge form and two of the straighter edged

type, while from the second grave four of the straight edge type and two of the gouge form were taken. In the grave having seven blades but one was of the grooved or gouge type.

It is evident from the above burials that at this period of the prehistoric culture of the New England tribes the adze was a very common and necessary tool, and that two or more of different sizes and of both types with varying degrees of edge curvature were often the property of a single individual.

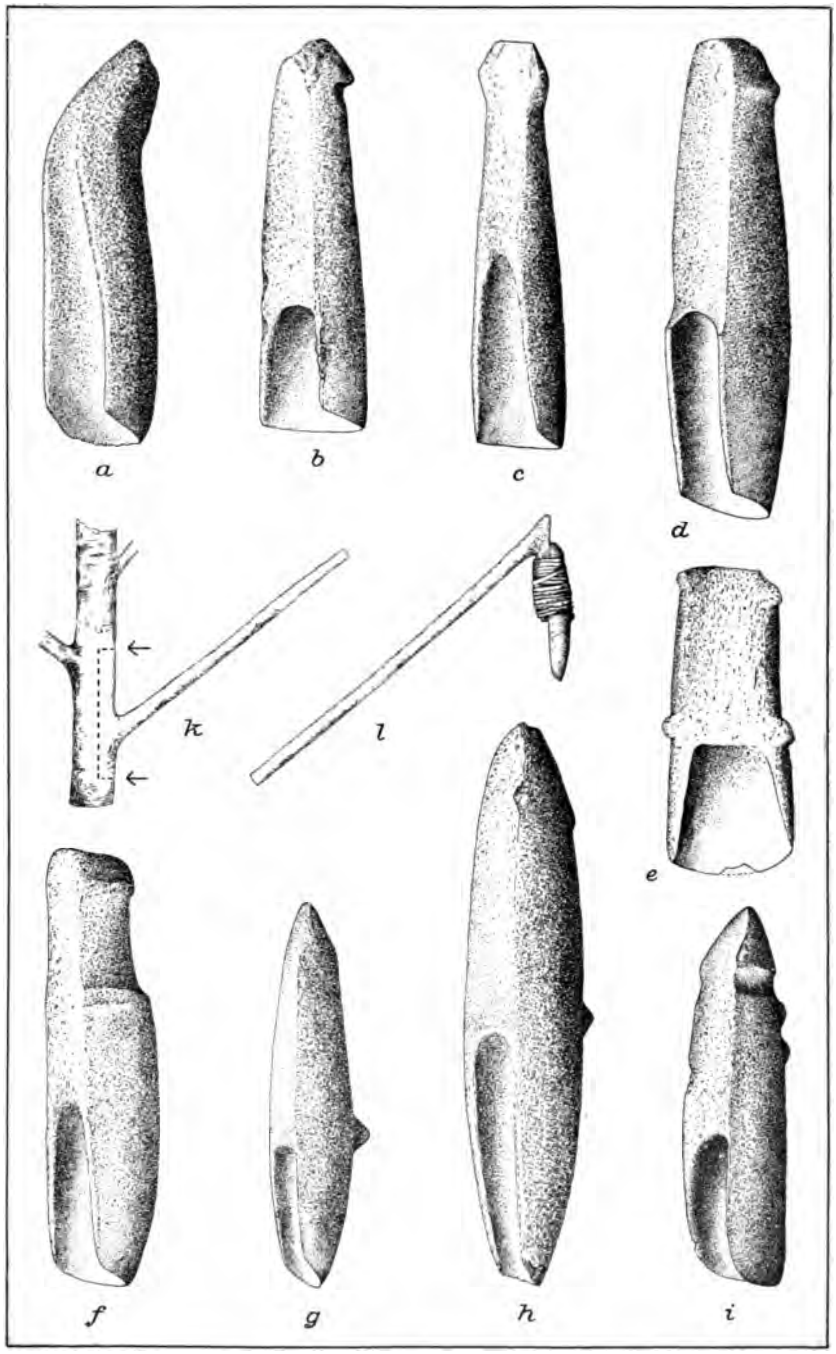
None of the blades from these burial places had a transverse groove or dorsal knob to aid in attachment to hafts. Blades having grooves or knobs for this purpose, although occurring in Maine, are more common in central and southern New England.

It seems that the ungrooved axe, although never a very common implement, was used by the Indians of New England in historic and later prehistoric times, but was unknown to the early inhabitants of this region, and while the adze was a common tool among the earliest tribes of which we have knowledge it was less common in the later prehistoric period, and its use in historic times, while probable, is uncertain.

Among historic American tribes generally the adze was used principally for woodworking. In the plains region however a small antler-hafted adze with a short iron blade set at right angles to the handle was employed in skin-dressing. It is probable that the primitive stone adze was also primarily a woodworking implement, although certain forms may have been used in dressing skins.

The historic and proto-historic tribes of New England were not extensive artificers of wood. In the construction of the larger objects, such as bowls, platters, mortars, and dugout canoes, the adze would be a useful but not an indispensable tool. The Indians of this region employed to a limited extent boards or planks in the construction of platforms and beds, and in the manufacture of cradles and similar objects. It is very probable that some of them were faced. Planks were also sometimes used for lining or partially lining graves.

In cutting logs into various lengths for the construction of dugouts, mortars, bowls, etc., and for palisades and puncheons in fort building, certain types of the stone adze would be most useful.



STONE ADZE BLADES; NEW ENGLAND. ONE-THIRD NATURAL SIZE

a, *b*, *d–h*, Massachusetts; *c*, Maine; *i*, New Hampshire. *a*, *b*, *c*, *e–h*, Peabody Museum, Cambridge; *d*, Collection of L. E. Wells; *i*, Collection of T. J. Eastman. *k* Shows Limb and Other Portion of Tree (enclosed by broken line) Commonly Used for an Adze Haft. *l*, Probable Method of Hafting Blade *h*.

The writer's experiments in woodworking with these implements have shown that the heavy narrow-edged forms illustrated on plate XIII, *a*, *b*, *c*, *k*, and on plate XIV, *i*, are especially adapted to this work. That they were made for heavy work is obvious, the great weight of these implements adding force to the blow. The cutting edge is very narrow, and the angle of the converging sides which produce the edge is great, to prevent breakage in use. A log can be cut in two with this type of adze, even without the aid of fire, by making two transverse grooves two or three inches deep a few inches apart and splitting off the intervening wood with wedges. By alternately grooving, and removing the wood between the grooves, the work can be done more rapidly than one would suppose. This method of wood cutting was practised by the Indians of the Northwest coast even after the introduction of iron blades. The straight or slightly curved edged blades of the types shown on plate XII would be very serviceable in hollowing out dugout canoes, dressing down planks, and in work of a similar nature if used in connection with fire.

The lighter and more delicate implements of the gouge type, similar to most of those represented on plates XIV and XV, are not suitable for heavy work but are well adapted to working charred wood, and some of them would be serviceable in skin-dressing, although it is doubtful if they were extensively used for this purpose. For removing fat from skins the Labrador Eskimo occasionally use a gouge-shaped tool, the lower portion of which is of tin curved and attached to a short wooden handle, the form of the implement being similar to the blade shown on plate XV, *b*. It seems however that this is a modern invention and in no way connected with the ancient stone blade.

Among the best examples of woodworking that have survived among the Algonquians are the wooden bowls wrought from the knotty portions of the maple. Some of the finer examples are not surpassed in durability or good workmanship by any similar utensils. These were formerly shaped by burning and scraping. In the construction of these and similar objects the more delicate gouge-shaped blades would be most serviceable.

The locality most nearly approaching New England and the adjacent territory in the development of the adze is the Northwest

coast region among tribes of expert woodworkers. Some of the blades of the Haida and the Tlingit have knobs or lateral grooves for securing the lashings and closely approach the Eastern forms, but the development of this implement on the Pacific coast was far behind that of the East.

The old adage, "The workman is known by his tools," may not hold true under primitive conditions. Nevertheless the high development of the adze in the East seems to indicate that the early prehistoric people of New England had reached a far higher degree of excellency in woodworking than our knowledge of the later tribes would indicate. It is not at all improbable that the extensive peat bogs which dot New England and which before many years will be worked for fuel may yet reveal examples of this earlier handicraft in wood.

PEABODY MUSEUM, HARVARD UNIVERSITY,
CAMBRIDGE, MASSACHUSETTS.

THE ALLIGATOR AS A PLASTIC DECORATIVE MOTIVE IN CERTAIN COSTA RICAN POTTERY

By C. V. HARTMAN

In Professor W. H. Holmes' work, *Ancient Art of the Province of Chiriqui*, the most interesting and instructive chapter is that devoted to the class of objects in clay which he has designated the "alligator group of ware." The alligator in this ware occurs usually as an ornament painted in red or black. The designs range from the rather realistic to the most highly conventionalized representations of the animal. A small number of these vessels are modeled to resemble in form this same reptile. The group is described "as composed chiefly of bottle-shaped vases with globular bodies and short, wide necks. Beside these vases there is a limited series of unusual forms, and a few pieces exhibit unique figures. Handles are rare, and legs are usually not of especial interest as they are plain cones or at most but rude imitations of the legs of animals. Shallow vessels are invariably mounted upon tripods, and a few of the deeper forms are so equipped. Usually the sizes are rather small, but we can occasionally observe a bottle having the capacity of a gallon or more."

Through exchange the Carnegie Museum recently obtained from Dr George Grant MacCurdy, of the Yale University Museum, a collection of alligator ware from Chiriqui, which formed a part of Professor O. C. Marsh's collection from this province. This acquisition induced me to make comparison with some new material, which I personally obtained in excavations on the highlands of Costa Rica during the year 1903, and in which the alligator as a decorative motive plays a dominant role. Nowhere else in Costa Rica has the supremacy of the alligator design over all other ornaments of a zoömorphic character come into evidence as in the ware here concerned. This ware, which belongs to an ancient culture in several respects different from the one typical of the common stone-cist burials of the highlands and the Atlantic coast, as

described in my *Archæological Researches in Costa Rica*, has hitherto been observed only within a limited area near San José, the capital, and in one or two localities on the Pacific coast. In these places however considerable variation in the artistic treatment of the alligator occurs.

As one of the forthcoming memoirs of the Carnegie Museum will furnish fuller information respecting these burial-grounds and their contents, I will here limit myself to a few general remarks about them and to the presentation of a brief preliminary review of the most characteristic forms of alligator ware here found.

The contrast between the Chiriquian group of alligator ware and that of Costa Rica may first be emphasized by the statement that the latter is exclusively the product of the plastic art of the potter, all the alligator designs being executed in clay, either in relief or as incised ornaments on the vessels, and are never painted; while in the Chiriquian group this class of ornaments is always painted.

Even during my first excavations in Costa Rica I discovered, in the burial-ground of Orosi, on the highlands, a few scattered fragments of clay vessels which were not only of different clay but showed ornamental features not represented in any of the vessels of the same or of other sites then examined. These are figured on plate 51, figs. 4–6; plate 62, figs. 5, 6, etc., of my *Archæological Researches in Costa Rica.* I could not at that time determine the origin of this class of ware; only after my return to Costa Rica some years later did my inquiries amongst the natives finally lead to the finding of its source. The collections which I thus secured for the Carnegie Museum were obtained almost exclusively from two small cemeteries not very far from San José. Unfortunately for the prosecution of more detailed and systematic work, the burial-ground in each place was situated in an old but still productive coffee plantation, and only narrow trenches could be dug in the open rows between the trees without endangering the roots, consequently it was impossible to prepare accurate maps of the cemeteries or to locate and record the finds in the most desirable manner. The open fields and meadows of the neighborhood were searched in vain for traces of similar burials.

No stone circles or other surface signs marked the place of these





TRIPOD ALLIGATOR VASES OF THE CURRIDABAT TYPE

burial-grounds; only fragments of pottery exposed by the rains led to their discovery. After excavating to the depth of from two to four feet large broken tripod vases were found in extraordinarily large numbers scattered in the greatest confusion through the soil and often occurring in heaps. They had apparently been purposely broken over the burials, which were met with lower down. Over a very small area in each place thousands of these large tripod vases were found, but only three specimens, of which two are here figured (pl. XVI, figs. 1, 2), had escaped the general destruction and were preserved entire. At the depth of from four to seven feet occurred other vessels, which were of the same kind of clay and manufacture, but different in form. These were globular pots and hemispherical bowls, nearly all of which were well preserved and found in an upright position, apparently having been deposited with the dead. No trace of bone however was met with in these burials. No stone cists of any kind had served as graves, and neither by means of the color nor of the consistency of the soil could the outlines of graves be traced. The deposited objects were the only signs left of the burials. Some stone implements, consisting of celts and a few clubs, the latter plainly of Nicoyan origin, were found with the urns.

All the clay vessels of these burial-grounds are of decidedly homogeneous character, being manufactured of a peculiar coarse clay, and are distinguishable from all other highland ware by their thickness as well as by means of certain peculiar features of the ornamentation. Nearly all other ware of the Costa Rican burial-grounds appears delicate and thin compared with this class of ware, which I would designate, by way of distinction, as "Curridabat ware," after the name of the ancient Indian village in the vicinity of which it was first discovered. The vessels are rather limited in variety of forms, there being practically only three occurring in any great numbers, namely those mentioned above. The relief and incised ornaments are executed with great skill and taste, and will later be described. Only a few painted vessels — mostly small red bowls with painted designs in black — were found. These designs were all purely geometrical and were applied only to the inside of the vessels. These painted vessels are interesting as being the only

genuine examples I have yet seen from Costa Rica showing the method of decoration which Professor Holmes has described for the vessels of "the lost-color group." [1]

By far the greater proportion of the large tripod vases of the surface layer, roughly estimated at about ninety percent, are almost devoid of ornaments. The body of the vessel consists of a semi-globular lower portion and a high cylindrical upper portion often encircled by two elevated ridges. The rim is more or less curved. The legs, which extend from the shoulder of the globular portion, are abnormally high, cylindrical to conical, hollow, and provided with a prolongation extending from the shoulder and representing a head, as is seen plainly in the realistic zoömorphic specimens. A peculiar feature of the large vases of this locality is that in all the specimens observed each leg is provided with only one longitudinal slit, while in similar vessels from other parts of Costa Rica as a rule there always are two opposing slits, one on each side. Legs of some of the smaller vessels of Curridabat ware instead of the slits sometimes show two longitudinal rows of circular holes, a peculiarity observed also in related ware from the Pacific coast. Each leg contains from one to several rattling clay pellets. All these large tripod vessels are red in color and are hardly ever embellished with painted designs.

Of the broken tripod vessels exhumed by my men, several hundred specimens were decorated with plastic ornaments of zoömorphic character or derivation, but only a very few bear anthropomorphic designs.

Roughly estimated, some eighty percent of these decorated vases may be classified as alligator vessels, being adorned with ornaments derived from the alligator or from parts of its body. The remainder of the decorated vases show representations of serpents, usually realistically rendered; of birds (toucans) with very large beaks; and, though very sparingly, of a few other animal and even of human forms. Conspicuous by their absence in the Curridabat ware, hitherto observed by me, are several animals which play an

[1] The negative form of painting illustrated in plate 45, fig. 1, of *Archæological Researches in Costa Rica* was produced, as later observation has shown, in a manner different from that of the Chiriquian "lost-color group."



BROKEN TRIPODS, CURRIDABAT WARE, WITH GEOMETRICAL DESIGNS MADE UP OF ALLIGATOR SCUTES

important role in the ornamentation of the clay vessels found in the stone-cist burials, as the jaguar, the antbear (?), the armadillo, and the frog. By reason of the ever characteristic renderings of the alligator in this ware and of the fact that it exhibits so few other animal types, the task of distinguishing and recording the various modifications of the alligator ornaments becomes comparatively simple. In the pottery of the stone-cist burials, on the other hand, in which the number of animal types is considerable and in which they often intermingle and merge one into another, it is usually difficult to trace with certainty all of the many variants or transformations of any special animal form.

It is the abnormally large legs of the tripod vases of the surface layer that furnish by far the most important and instructive material for a study of the alligator motives. These legs are either made to embody alligators, which is the usual way, or they are adorned with more or less realistic relief representations of the animal.

Plate XVI, fig. 1, 2, illustrate typical specimens of the alligator vases of Curridabat. In figure 1 the animal's long, tapering body, serving as the leg of the vessel, is plain, with the exception of a portion of the back and the head, which are conspicuously adorned with rows of scutes or spikes. The animal's head extends upward from the shoulder of the vessel, and shows the long mouth with its rows of teeth represented by small circular indentations. The eyes are formed by circular pellets each with a round depression in the center. Only the front legs of the animal are represented. In figure 2 the slightly curved upper main portion of the alligator's body is separated from the leg of the vase, only the ridge-like tail being united with the latter. The back is decorated with two parallel rows of scutes, consisting of small pellets placed edgewise.

Plate XVIII illustrates a number of typical legs of the alligator vases of this class of ware, and plate XIX shows a few specimens of similar legs of tripod vases from the Pacific coast, which display somewhat different characters in their ornamentation.

As frequently observed in zoömorphic ornaments, it is as a rule some one of the less important features — some rudimentary but characteristic organ — that is best preserved in all the more or less

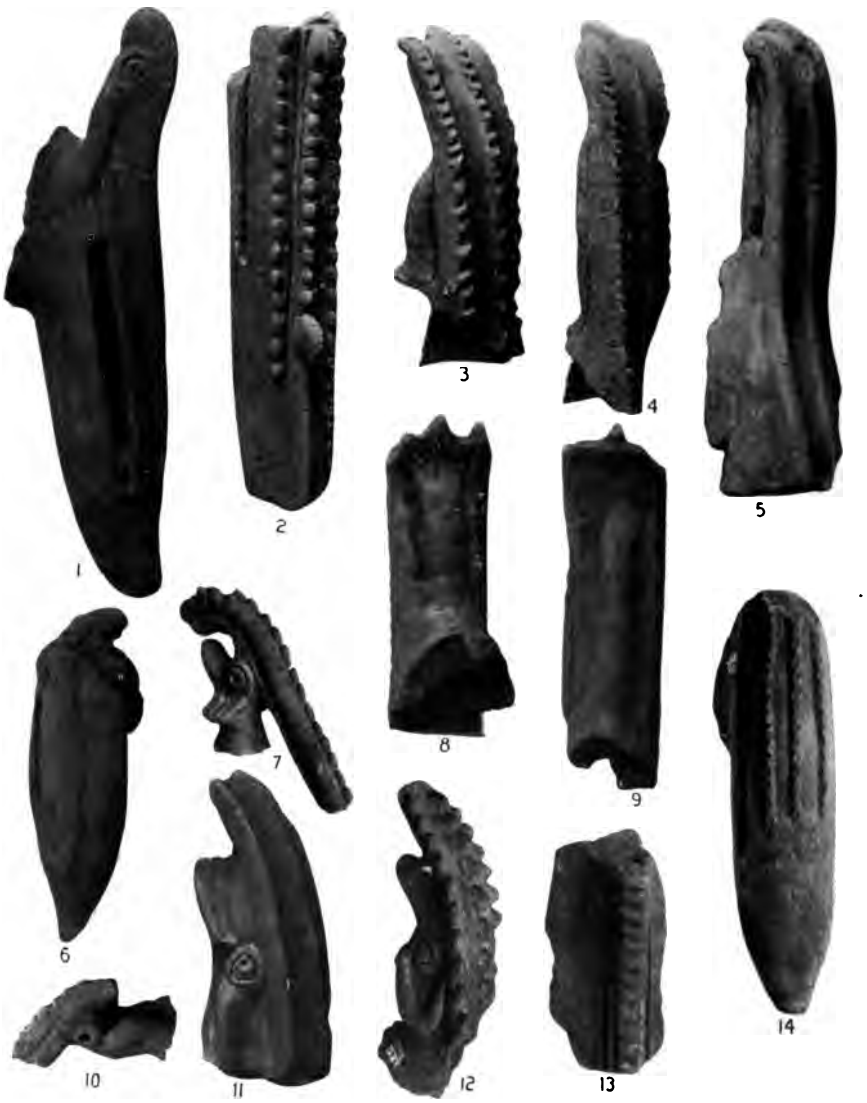
conventionalized renderings of the animal and which thus serves as a clue for tracing the original type.

The feature of the alligator ware of Curridabat that the modeler has emphasized above all others — the one which survives with the greatest persistency, as is plainly illustrated by the collection made — is the scute or scale ornamentation of the alligator's back. This character as a rule is represented by three, sometimes by two, parallel rows of pellets, and finally by a single row. These rows consist of a number of detached small pellets or spikes of various forms, or of punctuated strings, or simply by serrated, incised, or even plain ridges.

In the painted conventionalized renderings of the alligator in the Chiriqui ware the prominence of the scute ornamentation of the back is just as pronounced as in the ware here described; but another feature just as characteristic of the Chiriqui alligator in art — the upturned snout — is entirely lacking in the Curridabat forms.

In the Curridabat ware the scute ornamentation is not confined to the back of the more or less realistic animal representations, i. e., to the legs of the vases, but, as is illustrated in plates XVII and XVIII, becomes an important motive in the purely geometrical decoration of the bodies of the vessels. Pellets identical in shape with those of the alligator scutes are most frequently employed in the Curridabat ware as material for forming geometrical combinations — various simple patterns in low relief on the shoulder or cylindrical neck of the vessel. In a similar manner pieces of punctuated strings are usually applied in pairs for ornamenting the shoulder of globular vessels. From the observation of a large series of vessels at hand, the derivation of the elements of the symbolic, geometrical designs from the scute feature is quite evident. The limited space of the present paper permits the reproduction of only a few typical examples. The collection contains a large number of similar forms, and many others showing intermediate links.

Of the pellets representing the scutes there are three main variants: (1) The plain pellet, in form circular, oval, or triangular, often placed edgewise (see pl. XVI, figs. 1, 2; pl. XVII, figs. 1, 2, 4, 6, 8; pl. XVIII, figs. 2, 7, 12; pl. XX, fig. 6); (2) the incised pellet, usually oval (see pl. XIX, figs. 1, 3; and pl. XX, fig. 5); finally (3) the



LEGS AND LEG FRAGMENTS OF TRIPOD ALLIGATOR VASES OF THE CURRIDABAT WARE

circular pellet, with a hole in the center or a ring-shaped incision (see pl. XVII, figs. 3, 7; pl. XIX, fig. 2; pl. XX, figs. 1, 2). Indented ring-shaped marks are also employed to represent the eyes, as shown in several of the specimens illustrated.

When (as in pl. XX, fig. 5) the incised, oval pellets are placed rather close to one another in a single row, a natural step is taken toward the punctuated string, a variant serving the same purpose but produced with less labor and consequently frequently employed (see pl. XIX, fig. 6; pl. XX, figs. 7, 9, 10).[1]

The rows of pellets, or the punctuated string, is also very often supplanted by ridges, all of which may be serrated (as in pl. XVIII, figs. 3, 14), or only the outer two may be serrated, the central being plain (as in pl. XVIII, fig. 4), or the serrations may be entirely lacking and all the ridges left plain (as in figs. 5 and 11 of the same plate). Only through the presence of transitional forms may this strange form be traced back to the alligator. In pl. XVIII, figs. 6, 10, 13, and pl. XX, fig. 4, merely a row of cross incisions or impressions indicate the rows of scutes. In the rather realistic representation shown in pl. XVIII, fig. 1, the body is entirely devoid of scute marks.

Amongst the pottery of the stone-cist graves of the highlands and of the Atlantic coast there occurs a considerable number of tripod vases and bowls, varying in shape, but mostly very small, which are copiously embellished with ornaments in low relief. Undoubtedly the most characteristic of these ornaments consist of pieces of punctuated strings, usually occurring in pairs. This string ornamentation is used for filling empty spaces on the shoulders of the vessels; it appears not only on vessels with legs in the shape of small lizards, yet which probably represent alligators, but also on vessels with other animal and even human features represented by the legs. This peculiar string ornamentation in most cases has its origin in the scute rows of the alligator's back. But it was after the Curridabat ware, with its rich and instructive series of alligator ornaments in all stages of development, had imparted its lesson of the high importance attached by the native artist to this special feature, that the origin and meaning of the string ornamentation of

[1] The last three vessels do not belong to the Curridabat ware, but to the typical stone-cist ware of the highlands.

the stone-cist ware became apparent. Plate XX, figs. 7, 9, and 10, exhibit specimens from stone-cist graves on Irazu, and in *Archæological Researches in Costa Rica* there are many more examples.

A large group of the Curridabat vessels shows, instead of the low-relief patterns of attached scutes, simply incised designs, usually made up of small circular impressions or punctures which take the place of the ring-shaped pellets (see pl. XVII, fig. 5; pl. XX, figs. 3, 8).

A peculiarity of the Curridabat alligator form is the abnormal prolongation of the usually scute- or spike-covered portion of the upper jaw, which often extends to the double length of the lower jaw and then generally is slightly bent downward. In many specimens, as in plate XVIII, figs. 3, 4, 5, this extended upper jaw finally is the only part of the head represented. A rather unique feature of this prolonged thin jaw is the heavy string of clay which, from below, serves to strengthen and keep it in position. Plate XVIII, figs. 8, 9, show the under or rear sides of figs. 3 and 4.

The alligator form from the Pacific coast — the handle of a vase cover illustrated in plate XIX, fig. 5 — shows a rather realistic representation of the reptile with the large front teeth rendered and with the back and tail covered with three rows of scutes.

A small number of the incised geometrical designs of the Curridabat ware probably had their origin in another animal motive, namely, the serpent, which here is represented with scale marks, sometimes detached from the body. But as serpent vases are very rare, being outnumbered a hundred to one by the alligator vessels, the geometrical patterns derived from the former also undoubtedly are very few.

CARNEGIE MUSEUM,
PITTSBURGH, PENNSYLVANIA.



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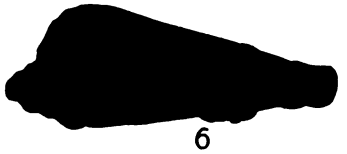
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4



5



6

1-4 AND 6, LEGS OF TRIPOD ALLIGATOR VASES; 5, TOP OF A COVER. FROM THE PACIFIC COAST OF COSTA RICA


1


2


3


4


5


6


7


8


9


10

SMALLER VESSELS OF THE CURRIDABAT ALLIGATOR WARE FOUND IN THE GRAVES



ABORIGINAL ANTIQUITIES IN SAINT KITTS AND NEVIS

By C. W. BRANCH

Introduction

The islands of St Kitts, or St Christopher, and Nevis, in the Lesser Antilles, though very small, are singularly rich in traces of Indian occupancy. St Kitts, we may infer from the name given it by the Caribs — *Llamuiga*, said to mean 'the fertile,'— was a favorite resort of those Indians.

At their discovery by the Spaniards the Lesser Antilles were all inhabited by the warlike Caribs, who remained in possession until displaced by the English and French settlers in the seventeenth century. Whatever may have been the origin of these Indians, there is no doubt that they must have displaced others in turn. This may be inferred from the analogy of all other races of whom the history is known, from their own traditions, and perhaps from the curious fact of their having two languages spoken by the men and the women respectively. We may therefore take it for granted that the traces found may represent successive occupancy by at least two different peoples. Mr im Thurn, in British Guiana, has been able in some instances to distinguish the relics of the late-coming Caribs from those of the aborigines; but nowhere in the West Indies has such a segregation yet been found possible.

The study of specimens from the Lesser Antilles has been limited almost to the Guesde collection[1] and the objects described by Mr im Thurn.[2] More careful search will reveal the shell implements and ornaments, the pottery, and the burials in these islands; and no doubt as investigations are continued the history and relations of the tribes will in time be determined. The writer hopes

[1] O. T. Mason, The Guesde Collection of Antiquities, *Smithsonian Report for 1884*, Washington, 1885.

[2] West Indian Stone Implements, *Timehri*, vols. I, II, III.

that the facts collected by him, which are new as regards these two islands, will be accepted as of sufficient importance in themselves, although he may not attempt to offer any explanation of their origin.

In St Kitts and Nevis, as in every other West Indian island, stone implements have been found ever since their settlement by Europeans, and as the memory of the Indians died out, their origin was attributed to the agency of thunder. This curious piece of folklore, which seems to be universal where the stone-age has been forgotten, has aroused the indignation of Mr im Thurn, though treated more philosophically by Stevens. No large collection of these stones has been made, unless we except that of Mr E. Connell of Nevis, which is here included. Very many specimens have become dispersed, some no doubt to find their way into museums, there to be attributed to wrong localities and so still more to entangle the already difficult problems in the ethnology of the West Indies.

Four pictured rocks have long been known in St Kitts. Years ago the writer picked up a conch-shell celt, which was the first known from St Kitts; but many such have since been found. In 1895 a laborer directed the attention of Mr Philip Todd to some bones and fragments of pottery in a gut-side at West-farm, St Kitts. These were presented to Dr W. J. Branch and noted in *Nature*. In 1896, as the result of long-continued search over the island, the writer observed a kitchen-midden at Stone-fort, and subsequently has located similar deposits at five other places in St Kitts. In 1897, while the "picture stone" at Hart's bay was being photographed, another etched rock was found near by. During a few weeks' stay in Nevis in 1897, the writer located two middens and recovered a few specimens from them.

By the kindness of Mr Connell the description and photographs of the stone implements appearing in this paper are taken chiefly from local specimens in his collection.

The work of systematic excavation in the middens has not yet been undertaken, but in the course of frequent visits, when the author conducted some desultory digging, a number of pottery fragments and a few shell objects were collected.

STONE OBJECTS

Form and character. — All the specimens here described were found on the surface, and with few exceptions bear only a vague record of locality. They are characterized by their symmetry of form and careful finish, but on the whole they do not show the complexity of design and high degree of polish seen in museum specimens. As already intimated, only the finest specimens are usually collected and find their way to the museums. In the Connell collection, and also in that of Dr W. J. Branch, there are a large number of simple forms, fashioned from coarse stone as neatly as the material will allow, indicating that the usual working tools were not elaborately made.

Mullers and Rubbers. — Mr im Thurn, though at first opposed to the idea that the Indians of the islands used maize,[1] admits later that such may have been the case. Robertson[2] criticizes the statement of Acosta that maize, though cultivated on the continent, was not known to the islanders, and in support of his criticism cites Peter Martyr, Gomara, and Oviedo on the use of maize in the West Indies at the time of their discovery.

The extraordinary number of implements of the grinding class found in these two islands show that they were in constant requisition for preparing maize ; no grinding of paint or even of clay for pottery could have demanded such a number of tools. Cassava, the chief food of the Carib according to the early writers,[3] does not require pounding, nor is it best prepared by such treatment. The use of maize only seems to explain the occurrence of such a large number of mullers. The small specimens were no doubt used for grinding colors and condiments. The mullers vary greatly in form ; indeed scarcely any two are identical in size and shape, although they are similiar in being made of coarse stone, generally the softer varieties of the usual andesite of the islands being employed.

The simplest type of muller is the conical variety, which may be ovoid with a pointed apex, or straight-sided, the latter being sometimes flat at the apex. In section the tools of this type may be

[1] *West Indian Stone Implements*, op cit., pt. I.

[2] *History of America*, vol II, note 32.

[3] J. Davies, *History of the Caribby Islands*.

circular or elliptical. The most ovoid specimens have usually a shallow depression in the center of the base. Common examples are figured on plate XXI, 4, 6, 7, 8, 9, and 10. Some of the elongate specimens are compressed toward the base, and appear to have been large celts adapted for use as pestles after the edge had become worn down. No. 5 of the same plate is almost cylindrical. Plate XXII, 8, of hard black stone, has an oblique concave base, and was probably used for smoothing other stone objects.

The first departure from this simple conical shape is a slight constriction near the apex, which, in the specimens illustrated (pl. XXI, 1, 2, 3), are truncated and narrow. The first of these shows the beginning of the next stage, the expansion of the base.

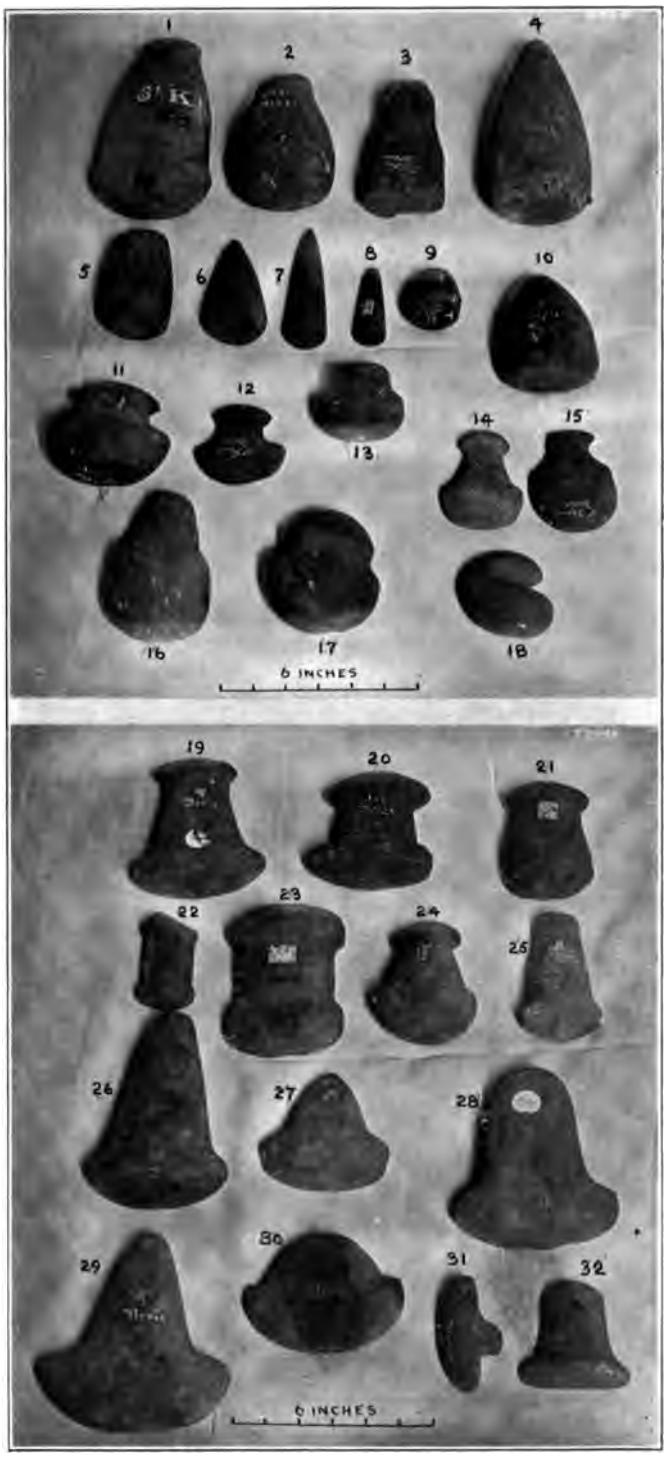
The third type is shown in plate XXI, figs. 26–29, 31, 32. These are all characterized by a more or less expanded base. In section they are elongate elliptical, except that shown in figure 32 of the plate which was circular, but is broken. The conical apex may be acute or truncated, as in the first or simplest type. The base is usually very convex, especially in its long axis. Figure 31 of this plate is a curious little object of this class with an exaggerated base. It is difficult to say to what use the specimen shown in figure 30 could have been put; it is less than an inch thick at the base and has a very thin awkward handle.

In the fourth type the apex as well as the base is expanded in order to afford a better grip. Plate XXI, 19–21, 24, and 25, illustrate this form. In figure 21 the expansion of the base has been removed, probably after the implement was broken, so as to restore the symmetry.

The two objects shown in plate XXI, 22, 23, represent a somewhat rare type in which the apex and the base are equal, giving the implements somewhat the shape of a dumb-bell. This probably has its prototype in the cylindrical form shown in No. 5 of the same plate.

A rare form of muller, having the conical apex curled over either laterally or longitudinally, is seen in plate XXII, 1, 2, 6, and 10.

Hammerstones. — This form of implement includes some carefully worked specimens resembling the third and fourth types of mullers; they are too short to hold in the hand, but are admirably adapted for hafting (pl. XXI, 11, 12, 13, 14, 16). Like most of the



STONE OBJECTS IN THE CONNELL COLLECTION

muller class of implements these are made of coarse-grain stone, and perhaps were used as maces or club-heads. Water-worn pebbles of dense hard stone, grooved by pecking, are represented in plate XXI, 17, 18. The latter specimen has the groove only half-way around. Otherwise these hammerstones are not worked.

Celts. — Included under this head are the petaloid and Scandinavian types of celt, and wedges. With one exception they are all of hard stone and are finely polished. Some of the smaller ones (pl. XXIII, 7, 14, 15) bear on the apex evident marks of battering, showing their use as wedges, while others, being thicker at the apex, are of decided wedge shape (pl. XXIII, 9, 10). In addition to the usual curved edge, some of the larger celts have a small beveled edge at the apex (pl. XXIII, 17). The exception noted above as being of soft stone is shown in figure 1 of the same plate, and was found by Mr W. Maynard at New River, in Nevis, while trenching to lay a pipe. The writer subsequently found the place to be a midden. This celt is of the Scandinavian type, unusual in stone in St Kitts and Nevis, although common in shell; it is of sandstone, incapable of being polished and rather soft, one would think, for cutting wood. Mr im Thurn is of opinion that objects of this type in the West Indies were intended for weapons and not for tools.

Hatchets. — Mr im Thurn objects to the term axe as applied to stone, and divides implements of this general type into adzes, wedges, and battle-axes. There is, however, abundant testimony by early travelers that savages did use stone axes to fell trees, etc. He considers that the broad blades (pl. XXI, 15; pl. XXII, 7; and pl. XXIII, 19, 20) are adzes and were used for hollowing out tree-trunks after the wood had been charred. But these tools are not usually made of such hard stone as the petaloid celts and consequently are less suited for cutting wood than for chopping flesh; besides, these broad hatchet blades are, in form, the most elaborate of all the implements, and are often decorated with a degree of care that is far more likely to be bestowed upon weapons than on mere tools meant for everyday use. That many celts were used also as weapons is more than likely, while on the other hand the hatchet blades (pl. XXI, 15; pl. XXII, 7) are extremely blunted, so that even if originally intended for use as weapons they must have been put to

more commonplace use on occasion. A fine blade of simple form and with two side nicks, from St Kitts, is figured in im Thurn's *West Indian Stone Implements* (plate VIII, 6).

Other stone objects. — Plate XXII, 4, represents a beautiful little blade of hard dense stone, 8 ½ inches long, three-fourths of an inch broad, and three-eighths of an inch thick, pointed at both ends and carefully smoothed though not polished. It is almost too brittle for use as a weapon, for since being in the collection it was accidentally broken by a slight blow; nevertheless, protected for most of its length in a hilt of soft wood or hide bound on wet, it may have served the purpose of a dagger. A somewhat similar but larger object is figured by Mr Duerden,[1] and a specimen identical in form with the one from Jamaica is in the collections of the Canadian Institute.[2]

Plate XXIII, 18, shows a sickle-shape cutting implement, with keen edges at the extreme tip of the smaller end and at the convex margin of the larger end. It may be grasped comfortably at the middle. For skinning and cutting up human flesh this implement would have proved very convenient.

Plate XXII, 3, shows a roughly shaped object, without any attempt at finish, provided with a curved groove along the face of the base. It was probably used for smoothing or sharpening other stone and shell implements.

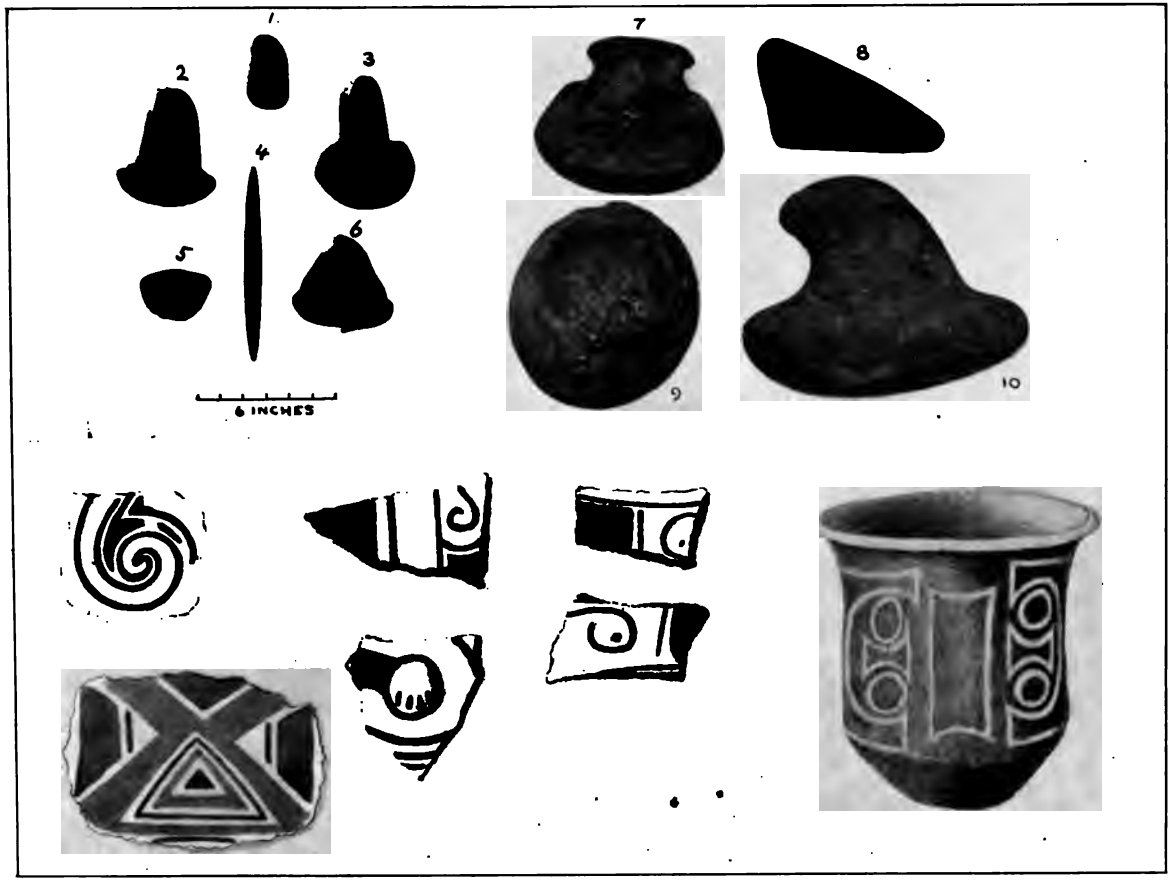
Figure 5 of plate XXII, from St Kitts, is of whitish sedimentary rock, different from anything known on the two islands. It has a groove along the thicker straight margin and pits for the fingers on the sides. It may have been intended for smoothing arrow-shafts or other woodwork.

Plate XXIII, 21, is apparently half of one of the objects vaguely known as "banner-stones," this one perhaps having been of the "butterfly-stone" shape. An attempt at ornamentation has been made by pecking the smoothed surface so as to produce a pattern by contrast. This style of work is seen on some elaborate hatchet heads from other islands.[3]

[1] *Indian Remains in Jamaica*, fig. 8.

[2] *Report* for 1897.

[3] See *West Indian Stone Implements*, op. cit.



Connell Collection. Figs. 7 and 9 in Possession of Huggins, of Nevis.
Decorated Pottery Fragments. Pottery Vessel Restored.

STONE OBJECTS AND POTTERY

Plate XXIII, 22, 23, illustrate amulets or charms. It has been suggested that the former represents a vulva, but until more definite evidence of the existence of phallic customs or rites in the West Indies is adduced, we must be content to regard it, like figure 23, as an amulet of unknown signification. The perforation in each of these cases was produced by rubbing a groove on each side till they met, and not by drilling. Figure 24 of the same plate exhibits a bulky crescentic object of considerable thickness. Its function is not known, unless it be an unusual form of rubber or grinder.

Plate XXIII, 25, shows a coarse, much-worn mortar from Nevis. Plate XXII, 9, is a beautiful little oval mortar or stone bowl in the possession of Mrs Huggins. On the near end may be seen a neatly drilled hole; at the opposite end the edge is deficient. Mr im Thurn figures a tiny mortar from St Kitts. With respect to the holes in the Nevis mortar, there can be no doubt that they were drilled. There is an oval stone mortar from St Barts, similar to this one, but without the holes, in the possession of Dr W. J. Branch. In the Connell collection there is a stone "sinker" from Nevis neatly perforated at the small end by drilling from opposite sides.

Figure 21 illustrates a rather remarkable object of somewhat coarse-grained black stone, found by a fisherman in Nevis in 1897 under a shore-cliff where the earth falls from time to time. This implement, or whatever it is, for we can form no idea of its meaning, is 9½ inches long by 4 inches across the head. The butt is an inch and a fourth in diameter and cut square with the sides. The head is set somewhat obliquely to the shaft, and is nearly triangular in section; the upper edge is not sharp.

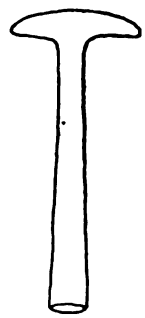


FIG. 21.—Problematical object of stone, from Nevis.

At the Two-mile Hill midden there was found a fragment of an object made of soft sedimentary rock; it is a corner of a thin plate, three-sixteenths of an inch thick and slightly concave. Such a tool may have been used to smooth the surface of pottery before drying.

From the surface of the St Johns midden was procured a fragment of a baking slab of stone resembling the baking tiles of which

numerous fragments were seen at the same spot. Originally the slab must have been circular, about two feet across, three-fourths of an inch thick in the middle, and an inch and three-fourths at the edge.

Half of a biconcave, elongate, oval mealing-stone was found at Stonecastle in St Kitts. The object was originally about two feet long by ten inches broad. One side is more hollowed than the other.

Flint-flakes. — These occur frequently in all the middens, but none have been found reduced to any definite shape. Similar flakes have been recovered from excavations in Jamaica and Demerara,[1] and from their frequency and the freshness of their fracture, artificial origin is indicated. The local flint occurs as nodules, with a thick whitish incrustation, in the shingle of some beaches, being derived from the shore cliffs of clay conglomerate. It breaks with very sharp edges, almost as sharp as glass. The flakes in the middens had been almost certainly used as scrapers and knives.



FIG. 22. — Worked flint, two sides; St Kitts. (⅔)

In January, 1898, there was found in Dr Branch's garden in Basseterre a flint apparently of purposive form (fig. 22). The blade in section is triangular, but not exactly symmetrical, one side being longer; the back is chipped down so as to make a flat surface, which may have been attached to a haft; there is a neat nick at the base; the cutting edge is sharp, but minutely notched by use.

SHELL IMPLEMENTS

As before mentioned, celt-like blades of shell have been found in some abundance in St Kitts, and are just as common in Nevis, though the Connell collection has only about five specimens. The writer is not prepared to agree with the statement that fossil shells from the limestone were used for this purpose. Examination of a large number of specimens from Barbados seems to show the identity of their condition with those of St Kitts, especially in cases

[1] im Thurn, *Among the Indians of Guiana.*

where the latter have been exposed on the surface. There is but little limestone in St Kitts, and none in Nevis, and although the writer has often hunted for fossils, he has never seen a strombus, so that this species must be comparatively rare in the limestone. The St Kitts objects are certainly made from fresh shell, as are probably also those from Barbados.

The common form of adze in Barbados was cut out of the columellar or inner lip of the king-conch (*Strombus gigas*). The anterior end of this lip is upturned to form the canal, and it is this curve that gives the peculiar twist to the end of this form of implement, which Mr im Thurn has aptly called the "shoe-horn" type. From the nature of the shell the cutting edge is necessarily gouge-like. The rare stone gouges sometimes found in the West Indies are probably imitated from the shell tool.

The shoe-horn type is rare in St Kitts. Most of the shell implements here are made from the broadly expanded outer lip of the king-conch. In most cases this is roughly chipped into shape, and care is taken only with the edge. The parallel furrows on the external surface of the shell are sometimes half rubbed down, giving the appearance which Mr im Thurn has mistaken for artificial grooving, but which is perfectly familiar to one acquainted with the shell. A number of tools of a better class occur, the writer is inclined to think, more commonly in the middens than on the surface, though this may be due merely to the destruction of the surface specimens by weathering and tillage. They are carefully ground to the petaloid celt or Scandinavian shape; occasionally they are almost triangular, and broad in proportion to length. Like the celts, the shell implements are of various sizes, from large unsmoothed specimens six inches long to nicely made chisels two and a half inches by half an inch, and neat little wedges two inches long.

A fact worthy of note is that a few short stout wedges are made from the outer lip of the *Strombus accipitrinus*. Rarely long narrow chisels were shaped out of the outer lip of the *Cassis tuberosa*.

Many of the shell adzes found in the middens are quite perfect, their edges not being blunt. It being fairly easy to grind these tools, they were probably kept in good order; and as they were little liable to serious breaking, in this respect unlike stone implements, but few damaged tools would have to be discarded.

From the Christ-church midden was taken a scoop made from the body-whorl of the *Cypræa exanthema*. This part of the shell would make an excellent spoon, but in this case half of it has been removed and the edge sharply beveled (fig. 23). The small end, where a handle may have been affixed, is broken. The scoop is an inch and three-fourths broad and was originally two inches long. On the surface of the Two-mile Hill midden was found a shallow spoon, cut out of the body-whorl of a king-conch. It is two and a half inches by nearly two inches, and about a quarter of an inch deep internally.

ORNAMENTS

A single bead of elongated barrel shape, 11 mm. by 5.5 mm., polished and neatly perforated through its long axis, was taken from the Christ-church midden by the writer. It is of opaque white



FIG. 23. — Shell scoop, Christ-church midden. (⅓)

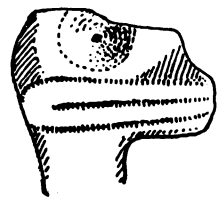


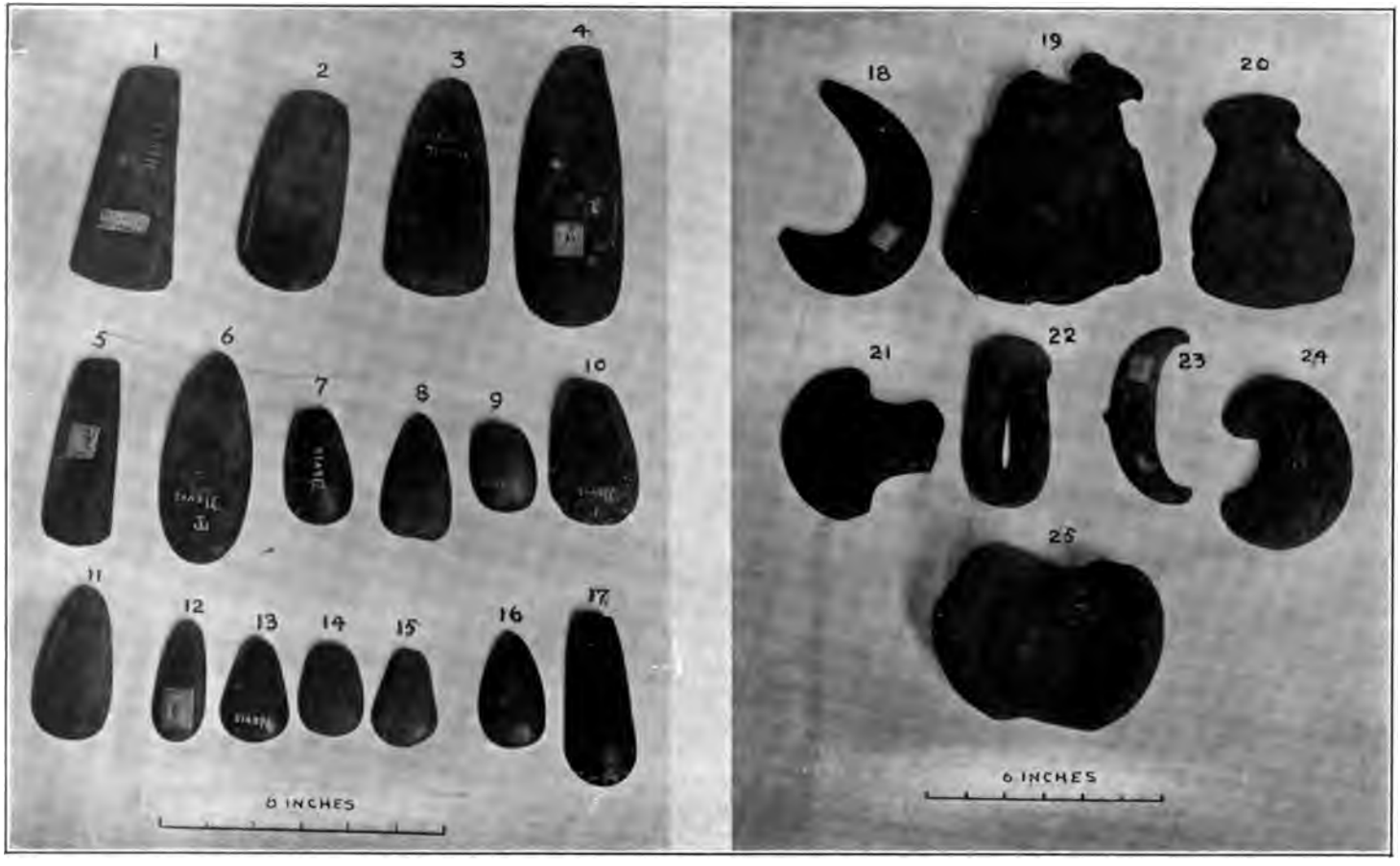
FIG. 24. — Shell amulet from St John's midden. (Nat. size.)

stone, probably quartz, with veins of hornblende. Mr im Thurn figures a shell pendant, shaped like a jaguar's tooth, from Nevis; it is half perforated from each side at one end, but the perforations do not meet.

From the Christ-church midden was also taken the flat valve of a red *Spondylus* with a small hole that was certainly artificially punched.

Figure 24 shows a curious object of conch-shell from the surface of St John's midden. It represents the head of a bird and is worked exactly alike on both sides. Whether merely ornamental or of symbolic significance is not known.

Many of the small shells, which occur in abundance in the middens, have been examined and compared but without establishing any probability of artificial perforation.



STONE OBJECTS IN THE CONNELL COLLECTION

POTTERY

The only entire examples of the potter's art yet found were in the Indian grave previously mentioned. The specimens discovered in this deposit (pl. XXIV, A) are (1) an oval bowl, 9½ inches by 6 inches and 3¾ inches deep, with a simple handle at each end, made of coarse dark earth, badly fired, and without ornamentation. (2) A platter, 8 inches by 7 inches, with the lip continued into a spirally curved, perforated handle; there are circular incised lines on the inner surface, extending into the spiral of the handle, and externally a small perforated boss for a suspending string. (3) A number of fragments, most of which have been pieced together so as to render a complete restoration possible (lower right-hand figure of pl. XXII). Thus restored the sherds are seen to be parts of a jar 12½ inches high by 13¼ inches in diameter at the rim. There is a simple pattern in white paint applied directly to the well-baked clay.

All of the pottery from the middens is very fragmentary. Only a few pieces are in a condition to indicate with certainty the character of the vessels (in these cases always small) of which they form parts; but in other instances it has been possible, by careful measurements and plotting of curves, to restore the original shapes from single fragments with more or less probability of truth.

The material varies greatly in texture and perhaps in composition. There is also considerable variety in technique, but probably only in accordance with the uses for which the earthenware was designed. Thus, the coarse unpainted sherds of cooking-pots and baking-slabs are so irregular as to indicate that these articles were modeled as is now done by the negroes in Nevis; while some of the lips and reflected edges of jars and basins are finished almost with the trueness of wheel-turned pottery, showing a high degree of skill in coiling.

There is considerable variety in the forms of the lips of ceramic objects, and as many of them were made with great care, the diversity cannot be attributed to chance. It certainly indicates a degree of individuality of invention on the part of the potters, or at any rate a selection guided by the taste of each artist. The varieties are represented in the accompanying outlines (fig. 25). Numbers 9, 11, 12, 13, 14, and 16 are of dark unpainted ware, some of the pieces

being ornamented with incisions. Numbers 1, 2, 5, 8, 15, 17, 18, 21, 22, and 23 show rims of red painted vessels, some with a thick layer of paint, others with a well applied slip. The remainder are from specimens with patterns painted on the plain smoothed surface of clay, without a slip.

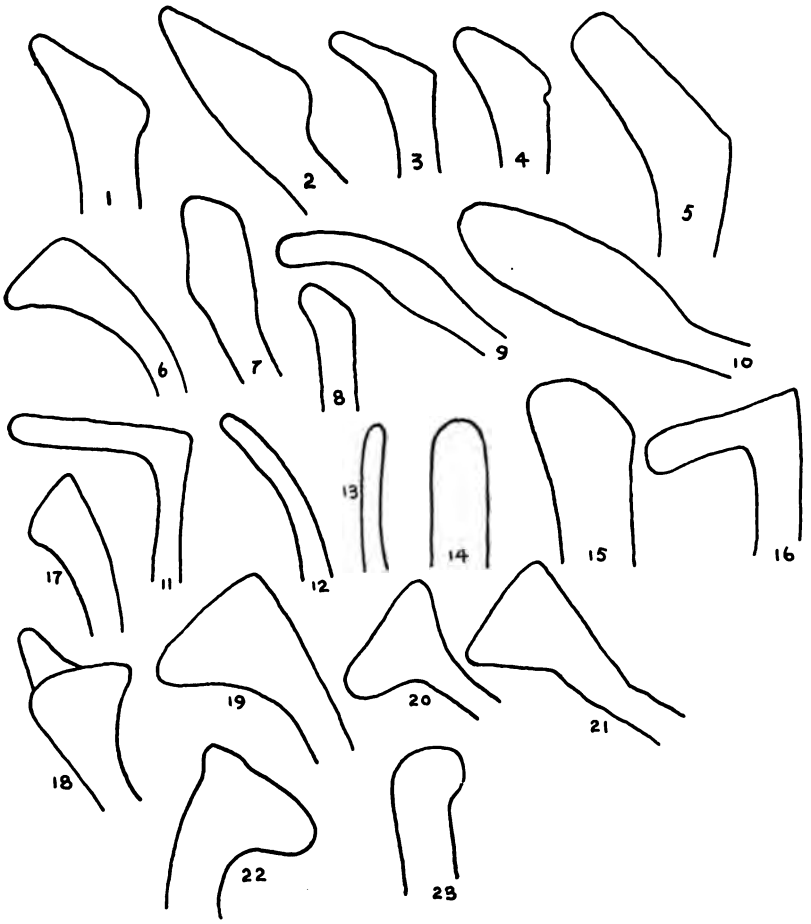


FIG. 25. — Sections of lips of pottery vessels. The right is the inner side in each case. (¾)

The surface of the pottery was often carefully smoothed, especially where paint was to be applied. In other cases the general inequality was rubbed down, but the marks of the smoothing tool are

plainly visible. Some sherds of dark clay show that the vessels were apparently purposely roughened on the outside by drawing a rough piece of wood or coral over the damp clay. The under side of baking tiles is left untouched.

On some vessels red paint is applied thickly over the whole outside or the whole inside, but rarely over both. A thin slip of red paint occurs on other pieces, well fired in so as not to appear as a distinct layer, as is the case with the thick paint, which is now cracking off. A slip of light red, well baked, is also found, but only on highly finished articles. A few very small sherds of unusual thickness, an inch or more, have a cream paint on one side.

The firing of the pottery also varies. The most carefully smoothed objects are extremely well burned, but the direct action of the flame is suggested by discoloration in some cases. The common coarse pots are very friable.

Ornamentation is achieved by means of incised lines and paint. It occurs naturally on the parts most exposed to view — the outside of jars, the inside of platters, and the expanded lips of basins. The incised patterns are all conventional, consisting mostly of straight lines, hatching, and sometimes dots (fig. 26). This form of decoration is found on thin unpainted ware of dark clay. Incisions are occasionally employed on thick painted vessels to define the painted areas. Deep squarely cut grooves, and wide modeled furrows occur on a few sherds of red-painted ware. One or more circular incised lines were drawn in the bottom of vessels of open shape.

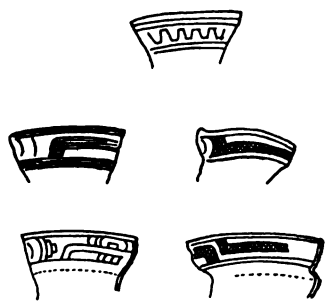


FIG. 26. — Incised patterns on pottery.

Painted patterns are also conventional; they are made up mostly of spirals and curves, along with straight lines, as shown in the lower left-hand figure of plate XXII. The patterns are in white or sometimes light blue, on a red ground or on the unpainted reddish clay. One example of an angular pattern is executed in white and light red on dark red. The thick rim of unpainted vessels is usually

painted dark red. A walnut-black stain, probably of vegetal origin, is used inside the lips of basins. The colors used are vermilion, light red, and dark red for slips (orange occurs on part of one well finished article); white and light blue for patterns; and the black stain mentioned above.

The examples of modeling and luting thus far found are almost entirely restricted to handles, which consist of simple ears and bosses and the common loop. A fragment of an earthenware human mask was obtained, showing in part the method of face painting. The skin is of chocolate color, the lips vermilion, and the pattern is in white (fig. 27). Figure 28 shows what seems to be a handle in

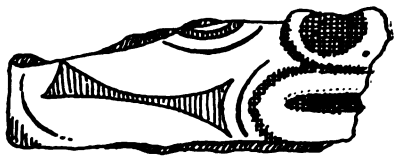


FIG. 27. — Fragment of human mask in pottery, from Stone-fort. (½)



FIG. 28. — Turtle's head in pottery, from Two-mile Hill.

the form of a turtle's head. Another sherd bears what appears to be a prominent eye luted on.

The sherds belong to a variety of vessels and utensils. Fragments of circular baking tiles, an inch thick, with a slightly raised edge, are common. Very numerous sherds of soot-stained cooking pots point to a more or less globular form, but no exact restoration has been possible. The forms of vessels as existing or restored are best described by plates XXII (lower right-hand figure), XXIV, A, and figure 29. Platters, basins, bowls, and jars are the types thus far determined from the fragments. The bottoms are never convex, but are always flat or slightly concave. Several bottoms raised on a foot have been found. From the similarity of material and technique this foot has been provisionally assigned to the type of bowl represented in figure 29.

ROCK CARVINGS

The known petroglyphs of St Kitts occur at four places, but in one case the stone may have been brought to its present position in



POTTERY AND PETROGLYPHS

recent times. Photographs of some of the petroglyphs have been obtained, after darkening the incisions with charcoal and touching up the high lights with a whitish stone.

At Hart's bay, below West-Farm, there is a large rock (pl. XXIV, C) washed by the sea on one side, while the other side, facing the north and sloping at about 45°, is covered with uncouth figures, many now almost effaced by weathering. The petroglyphs all represent human faces or figures. The incisions are deep, originally perhaps a quarter of an inch, and the rock is the ordinary trap of the island. While having this rock photographed the writer found a smaller one with simple faces cut in the same style (pl. XXIV, D). Both the east and west sides of this stone bear carvings. There are two kitchen middens within half a mile of this spot.

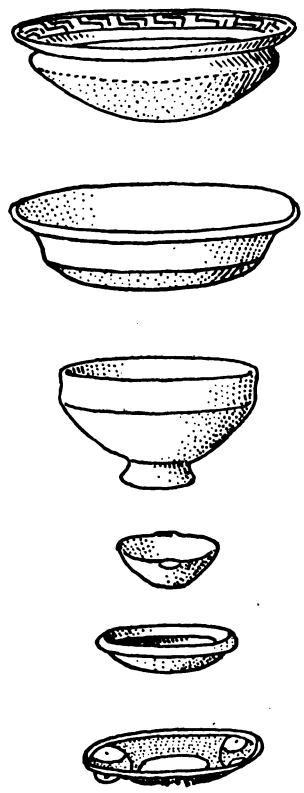


FIG. 29. — Restorations of pottery. ($\frac{1}{10}$)

Up Stone-fort ravine, a few hundred yards from the road, the sides of the gut, here about fifty feet high, approach within ten or twelve feet and make a narrow gloomy gorge with perpendicular or overhanging walls. Along both sides are numerous grotesque human faces and occasionally figures, cut in the case-hardened gravel and sandstone. They are for the most part well out of reach, but it is not necessary to suppose that this indicates the fall of the stream-bed since they were made, for the artists had only a limited vein of sand affording a surface suitable for this work. The cliffs are mostly of coarse gravel, with large pebbles and rocks embedded. It must be admitted that with a hard stick it is comparatively easy to mark the sandstone, and some of the faces, low down on the west wall, were perhaps made or retouched by idle hands.

Local tradition has assigned an ancient date to the carvings; the story is that a battle having taken place between the English and French settlers, the latter were defeated and driven up the gorge. While hemmed in here, and before they were finally massacred, they amused themselves by sketching on the walls of their prison, according to the usual custom of historical prisoners. The stream bears the alternative name of Bloody river to this day. The actual petroglyphs at this place number more than a hundred. Of the certainly genuine Indian works, a few of the best preserved are represented in figure 30. They do not lend themselves to photography, although one satisfactory plate showing two eccentric figures was obtained. There are other large and comparatively elaborate heads which the writer hesitates to figure, although himself sure of their Indian origin, because of the slight doubt manifested by others on this point.

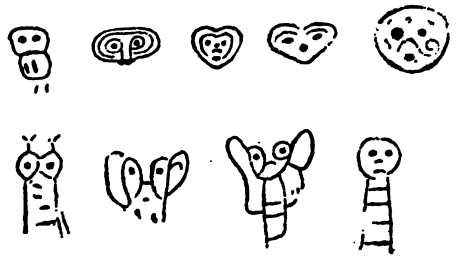


FIG. 30.—Petroglyphs in Stone-fort gorge, St Kitts.

The finest example of rock carving probably in the Lesser Antilles occurs at Wingfield estate. In a cane-field, about thirty yards from the road up to the works, occur a group of bowlders of purely natural form and arrangement. The largest of these presents a flat surface, inclined at about 30° and facing almost north, on which are two figures, locally called the "Man and Woman." They measure 32 by 27 inches, and 24 by 18 inches, respectively (pl. XXIV, B). The chief lines are half an inch deep and two inches wide. The larger is a human figure with an enormous belly on which the navel is indicated. The head is small and simple, consisting of eyes and a mouth enclosed in a broad face, like some of the simple etched figures at Hart's bay and at Stone-fort, but in this case it has large ears. The smaller figure, also human, has a large square head with two curling plumes. The body is represented by a straight line intersecting a small circle. Both figures are drawn in a squatting posture, and the limbs are treated in the same conven-

tional style as in some of the deep petroglyphs of British Guiana. A trace of a third face is seen on the right of the photograph.

At Willett's estate, on the north side of St Kitts, to the rear of the manager's house, is a flat, natural slab, 3 feet by 2 feet and 6 inches thick, bearing petroglyphs (see figure 31). It has been placed, no one knows when, by some gentleman with antiquarian instincts, on a rough masonry pedestal, with the view no doubt of preserving the carving; but in these utilitarian days the stone has been found convenient in washing the clothes and in grinding the chocolate for the family, and in consequence the petroglyphs are almost effaced. It is with difficulty that the details of the chief figure can be made out; it is 10 inches long by 7 inches wide at the base; the lines are half an inch broad and were very shallow; they are now marked only by being still rough while the general surface of the rock is worn smoother. One may imagine that the figure represents the front view of a man sitting cross-legged. The head has large pendulous ears. There is another face on the rock, and traces of several others of the simple eyes-and-mouth type.

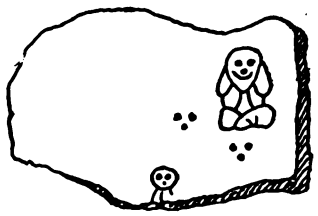


FIG. 31. — Petroglyph at Willett's, St Kitts.

These rock engravings do not present much mutual resemblance With the exception of the Stone-fort faces, they are all cut in hard rock. The incisions are generally deep, especially the eye-holes. The eyes surrounded by circles, like goggles, are seen at Hart's bay and at Stone-fort. This form occurs in Jamaica.[1] The general style of the Wingfield figures is that of the deep carvings of British Guiana.[2] The Willett stone slightly resembles the petroglyph in St Vincent figured by Ober.[3]

MIDDENS

The writer has been able thus far to locate the sites of six Indian settlements in St Kitts and two in Nevis.

The new road cut by Governor Haynes Smith round Stone-fort passes through the steep slope of the hill to reach the edge of the

[1] Duerden, *Indian Remains of Jamaica.*

[2] im Thurn, *Among the Indians of Guiana.*

[3] *Camps in the Caribbees.*

shore-cliff, along which it then runs. The new cutting exposed a midden that was very rich in debris. Claws of the land-crab and occasionally of sea-crabs, shells of the whelk (*Turbo pica*), queen-conch (*Cassis tuberosa*), king-conch (*Strombus gigas*), and several others, fish-bones, bones of birds and a small mammal are extremely plentiful, while fragments of shells and bits of coral and sherds of pottery complete the refuse. A few conch-shell implements have been recovered. No systematic excavation of this nor of any other midden has been undertaken.

In the field above West-farm estate fragments of Indian pottery were found in a roadside cutting. Within a few yards of this spot was an Indian grave.

Where the road passes through Two-mile hill, below Johnson's estate, fragments of pottery, broken shell, crab-claws, and shell implements are scattered freely on the field and in the roadside cutting. A shell spoon was picked up on the surface at the roadside, and conch-shell implements are particularly abundant on the fields in this vicinity.

At the edge of the road, in the field facing the village of Cayon, Indian pottery has been found associated with broken shells, etc. These four sites are in close proximity to streams.

In the field abutting Christ-church cemetery there is a rich deposit of aboriginal debris. Where the pits dug for "rain traps" expose a few feet below the surface, fragments of pottery, a stone bead, and a shell scoop have been found associated with crab-claws and fish-bones, as well as great quantities of small shells — nerita, monodonta, fissurella, joints of chiton, etc. The shells here found still retain their natural colors to a great extent.

In the field opposite St John's school may be found fragments of pottery of the same type as in the other middens, and associated with broken shell (mostly of the smaller kinds as at Christ-church), occasional fish-bones, and shell implements. An incisor of an agouti, and a piece of coral very much worn by rubbing at one margin were found here, and a piece of a stone baking-slab, a shell amulet, and a pendant were also procured from this site. These two last mentioned sites are on the northern side of St Kitts, far from any stream or other fresh water. Springs may be found in the mountains, but at a distance of more than a mile from either of these spots.

At Butler's estate, in Nevis, there is a field which has always borne the name of "Indian camp." On examination it proved to be profusely strewn with broken shell and very fragmentary pottery; indeed the latter was scarcely distinctive of Indian work.

At New River estate, in Nevis, Mr W. Maynard found a fine stone celt while having a trench dug. The writer afterward visited the spot in his company and found it to be undoubtedly a midden. A little digging was done and a number of fragments of pottery and several shell adzes were unearthed. The former afforded some good examples of Indian work.

The prevalence of fragments of coral among the Indian debris is significant. They were certainly used for filing, rasping, and smoothing objects of wood, or perhaps even shell and bone. One piece that shows decided marks of continued use has been collected. The flint flakes have already been commented on. Common water-worn pebbles with marks of hammering were very probably used by the Indians, but such protoliths are natural to man of all stages of culture, and no notice has been taken of them by collectors.

Mortuary Remains

It has already been mentioned that pottery associated with human leg-bones were taken from a gut-side at West-farm. On visiting the place a few months later, the man who originally made the find was able to identify the exact spot, and excavation from the top of the little cliff revealed the skull, which, with as many of the bones as could be handled, were removed. Nothing else was found with them.

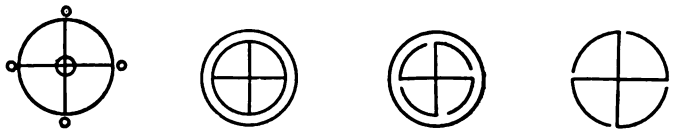
The body was buried facing the east, in a sitting position with the arms crossed and the fingers resting on the shoulders. The face was upturned. The pottery had been placed evidently in front of the feet. The bones are those of a male adult. The occiput was flattened to such a degree that the outline of the back of the neck must have continued straight up to the vertex. Unfortunately, before the bones were prepared with glue to allow of handling and measuring, the facial and basal parts of the skull suddenly crumbled away. The earth of St Kitts appears to have a remarkably disintegrating effect on bone.

St Vincent,
West Indies.

OBSERVATIONS RELATIVE TO THE ORIGIN OF THE FYLFOT OR SWASTIKA

By FRANK HAMILTON CUSHING[1]

While studying the pictographic designs representing games of the ancient Mexicans, I was struck by the symbol which stood for the world and the four quarters, according to which all arrow games or diagram games derived from them were played. This consisted of a circle enclosing a simple cross (see figure *a*). Oppo-



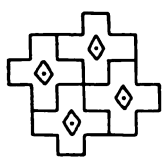
a *b* *c* *d*

site the four extremities of the cross, however, were little circular dots each of a different color, leaving no question as to the significance of the enclosed cross as that of the four directions, or the plane of this world. This latter was further shown by a slightly larger dot or circle, *parti-colored*, and placed in the center of the circle at the intersection of the cross as the synthesis of the four regions represented by the external dots as the "all in one." Among the Navajos the world and the four directions as one are represented in an identical manner, although no dots are used, but a double circle is sometimes drawn (*b*). This is especially the case when the figure is drawn as a sacred diagram. A very significant variant of this is sometimes to be observed in which the points

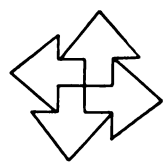
[1] These notes, from an incomplete and unpublished lecture by the late Frank Hamilton Cushing, together with the accompanying "shield-making prayer of a Priest of the Bow" of the Zuñi Indians, are kindly furnished the *American Anthropologist* by Mrs Cushing. The notes were probably not designed by their author for publication in their present form, but for obvious reasons are here given without change. The prayer, so significant as showing the origin of the fylfot or swastika at least among the Zuñi, was written down by Mr Cushing both in the language of that tribe and in translation. Each is given in facsimile. The totem at the bottom of the original is the *ténatsali* flower, Ténatsali being Mr Cushing's Zuñi name. — EDITOR.

where the arms of the cross join the inner circle are broken off at one side (*c*). Yet further, amongst the Pimas of Arizona the symbol of the four winds is made singly by leaving off the outer circle of this diagram and employing merely the cross with the four curved arms (*d*). This figure is common throughout ancient America, from Ohio to the ruins of Yucatan and the Andes. In a few instances the cross with these curved arms becomes the true swastika, as among some of the pictographs of the Southwest; and my observations of varieties of these have led me, in connection with the known meanings of the Mexican, Navajo, and Pima diagrams, to the conclusion that the right-angle swastika, so to call it, was primarily the representation of the circle of the four Wind-gods standing at the heads of their "trails" or directions, but necessarily represented at right angles to these trails in order to distinguish them therefrom. In the light of this observation, the open spaces in the inner circle of the Navajo, and the broken circle of the Pima diagram, become conceivable as the gateways of the winds, thus symbolizing not only the world and the four quarters, but also the winds of the four directions, all in one figure. That the true swastika of the Orient and the gammadion of Europe and their many variants (which I have since made study of) had practically the same genesis as these early American forms seems to admit of little doubt.

The examination of the Zuñi gammadio-form arrangement of the four sacred ancient spaces or terraces of the gods (of the four directions, see figure *e*) and of the ancient Finnish fylfot-arrow symbol



e



f

of the thunderbolt (of all directions, see figure *f*) would seem to add so much evidence to this conception of the original meaning of the swastika that further research seems desirable.

The peculiar form of this symbol of the world and the two or

four directions or quarters in it used in games, divinations, and the heraldry of China, Japan, and Korea, in which the arms of the enclosed cross are double-curved (*g*), is but another variety of this



g



h

swastika, of which I also observed beginnings in the Mexican pictographs representing the celebrated mantle of the five roses on which the sacred game of pachisi was customarily played (*h*). It is probable however that this figure, as apart from the simpler region symbol, was developed both in Mexico and in the Orient in connection with cane (arrow) games, a section of a cane or reed at one of



i

its joints (*i*) representing the highest or all count (as well as all the four quarters and their synthesis), whilst the cane divided into four slips stood for the four quarters apart, each counting according to the quarter it was marked for and conformed to, as in the symbol of the four directions and the world within them seen on Chinese compasses and on the national flag of Korea (*j*).



j

The Shield-making Prayer.
of a Priest of the Bow

Sh!
Hom Áïetchú, Kyákpin-k'hai!
Kéwi Dínakwe páth tapté
Hom téthianawé, hom áiyalanawé
Hoth téanth.
Ekk Télikwente
Thoth tétua ínakwé
Kwahoth ákyaní,
Átsumanawani kyaná.
Kúkiya yátton'é,
Hom tonlén áiyalanawé ——— 卐
Ekthtloth tétua ínakwé,
Ápikwainan tun ákyaní,
Hom ton aiyalanawé ——— +
Hákti tátsháná, Kéhli thlúptsinatkóá 卐
Kíyaka ti kwiná, Kyálishi Télikwikóá 卐
Jápi áhashá, Hákjaa álahotkóá —— 卐
Yúnawi kóhánishi jétua etsatikóá —— 卐
Áténia katopá Díyana tílohnatkóa
Pén thla mó; —— 卐
Hom ikeina áiyalanawá
Pen ta hom itia wúthlanatkya — 卐

Sony Thomas the Tanishi
Jénatsali
Shohkya kona

Áïyalanashkiya Tenu-pénawe
Pilulan Shiwan áni

Saark!
My Fathers, Beast Gods all!
However many be the foe
make precious yé and shelter mé
Wherever Kyó!
but not from whatsoever way
By whatsoever means
The enemy wherever They
Assail the way!
This day do yé
So-shelter mé —— —— —— —— —— —— 卐
That never any enemy
may win to mé —
So shelter mé —— —— —— —— —— —— +
Oh long tailed lion of the gleaming North —— 卐
Oh Black robed Bruin of the gloaming West — 卐
Oh Fiery wild cat of the glowing South —— — 卐
Oh Wolf, gray coated, of the glinting East —— 卐
Oh Knife winged Being of the Ore world
Oh All of Yé —— —— —— —— —— —— 卐
So shield thy heart
And so encompass mé —— —— —— —— 卐

Yours faithfully
Frank Hamilton Cushing

Untied it.

DISTRIBUTION AND CLASSIFICATION OF THE MEWAN STOCK OF CALIFORNIA

By C. HART MERRIAM

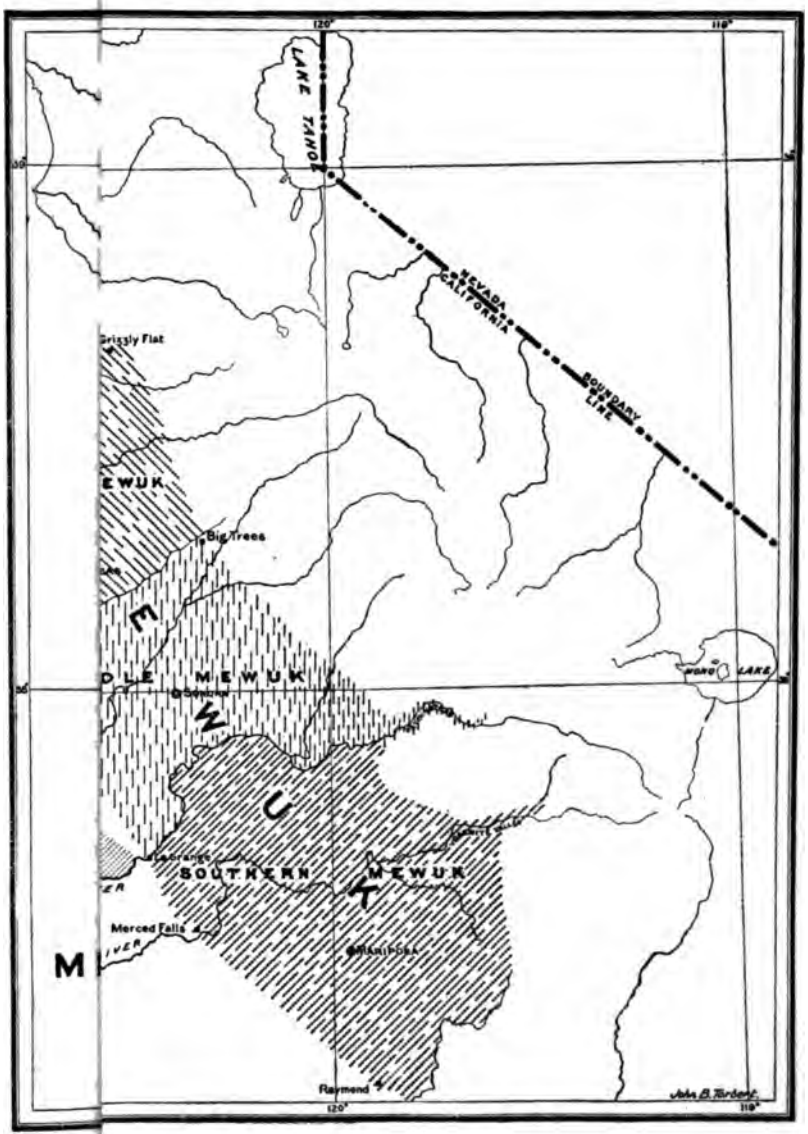
Introduction

Of the twenty-four or more linguistic stocks of California Indians the *Me'-wan* (called by Powell *Moquelumnan*) is one of the largest, one of the most diversified, and one of the least known. In population, in number of tribes, in extent of territory, and in degree of differentiation it has only a single rival — the Piute.

While its early history and migrations, and the vicissitudes by which it became broken up and scattered may never be known, this much is certain: that for a period reaching far back into the past — so far indeed that there are no traditions to the contrary — it has consisted of four principal divisions, two of which are in geographical contact, the other two separated from the main stock and from one another by tribes speaking widely different languages. For many hundreds — perhaps thousands — of years it has occupied three distinct and disconnected areas — a large and broad area in the middle of the state, comprising the foothills and lower slopes of the middle Sierra, with an adjacent section of the great interior valley, and two small independent areas in the coast region north of San Francisco bay (see map).

The main body of the stock consists of two principal parts, which may be known as the *Me'-wuk* or Mountain people, and the *Mew'-ko* or Valley people — each comprising a number of tribes and subtribes.

The tribes north of San Francisco bay occupy two isolated areas — one, the coast region from the Petaluma marshes westerly to Point Reyes and north nearly to Russian river; the other, a narrow area reaching from the south end of Clear lake in Lake county southward to Pope valley in northern Napa county.


120°
LAKE TAHOE
NEVADA
CALIFORNIA
BOUNDARY LINE
Grizzly Flat
EWUK
Big Trees
MIDDLE MEWUK
Groveland
SOUTHERN MEWUK
Merced Falls
Raymond
120°



The coast people were of three tribes, differing somewhat in language — the *Hoo'-koo-e'-ko*, *Lek-kah'-te-wut'-ko*, and *O'-lah-ment'-ko*.

The Lake County people have no tribal name for themselves, but, like the Sierra Mewuk, use the various rancheria or village names. They may be called *Tu'-le-am-me* from their ancient settlement a little south of Lower lake, or *O'-lā-am-me* from their more recent settlement on Putah creek in Coyote valley.

The stock here called *Me'-wan* has been, in whole or in part and under various names — as *Mutsun*, *Moquelumnan*, and *Mewuk* — the subject of discussion by several authors, notably Powell, Powers, and Gatschet, although nothing approaching a correct statement of the distribution and relations of the tribes has as yet appeared. Of the stock names in use, *Mutsun* has been already dropped as belonging to another stock. *Moquelumnan* I reject for two reasons — its clumsiness, and the fact that it is based on the name of one of the smallest and most insignificant tribes of the entire group. In its place I here introduce the stock name MEWAN, derived from the root of the word for 'people' common to nearly all the tribes (as *Me'-wuk*, *Me'-wah*, *Mew'-wah*, *Me'-wĕ*, *Me-u'-ko*, *Me'-chah*). Mewan has the double merit of brevity and of conformity with the usual mode of ending stock names.

The aim of the present paper is to suggest a classification for Indian tribes, to apply this classification to the Mewan stock, and to record certain original observations on the distribution of its several divisions. Published material is neither repeated nor discussed; controversial matters are avoided, and in the lists of villages of the various tribes none are included save those given me by the Indians themselves.

Indian words are written in simple phonetic English, and diacritical marks have the phonetic values ordinarily given them — as in the Century Dictionary.

CLASSIFICATION

In attempting a classification of the Mewan stock one is confronted at the outset by the absolute non-existence of such a thing as a standard of classification for Indian groups. Ethnologists use

the terms "stock" and "family" interchangeably, regarding them as synonymous, and drop at once from stock to tribe, giving no heed to divisions of intermediate rank. And if evidence of relationship, however remote, is detected between two or more stocks the practice is to merge such stock under a common name and pool the contained tribes — as if the aims of science were served by the abolition of group names and by mixing together in a common jumble a rabble of tribes of diverse relationships!

Imagine the chaos in zoology and botany if families or genera were merged whenever relationships are established with other families or genera. Surely no one will dispute the assertion that the recognition by name of well defined groups in nature — whether in botany, zoology, or ethnology — is essential to a clear and ready comprehension of kinship — so essential indeed that without it progress in classification is out of the question.

Why not allow the well differentiated stocks to stand, irrespective of remote affiliations, and bring together allied stocks under the broader term "phylum"?

To the naturalist, accustomed to grouping forms of life into classes, orders, families, genera, and species, with subordinate divisions under each, the absence of classification in ethnology is most bewildering, and to the student of anthropology, whatever his antecedents, it must necessarily prove a serious obstacle to the clear perception of relationships.

The purpose of classification is to bring things of a kind together, to arrange related objects in such a manner as to show degrees of rank and affinity, and to supply convenient headings for categories of equal value. The number of categories needed depends on the number of groups of different rank requiring classification. In the case of Indian tribes, it is believed that all ordinary needs may be met by the use of the headings phylum, stock, family, subfamily, tribe, and subtribe. If in exceptional cases more are required, superfamily and supertribe may be added.

The following is submitted as a provisional classification of the Mewan stock:

Classification of the Mewan Stock

STOCK	FAMILY	SUBFAMILY	TRIBE
ME'-WAN	Me'wuk	Me'-wuk	Northern Me'-wuk
			Middle Me'-wuk
			Southern Me'wuk
		Mew'-ko	Hul-poom'-ne
			Mo-koz'-um-ne
			Mo-kal'-um-ne
			Chil-lum'-ne
			Si-a-kum-ne
			Tu-ol'-um-ne
			O'-che-hak
			Wi'-pā
			Han-ne'-suk
			Yatch-a-chum'-ne
	In-ne'-ko	Tu'-le-am'-me	Tu'-le-am'-me (or O'-lā-yo'-me)
		Hoo'-koo-e'-ko	O'-la-ment'-ko
			Le-kah'-te-wut'-ko
			Hoo'-koo-e'-ko

MEWUK FAMILY

The *Me'-wuk* family comprises the two largest divisions or subfamilies of the stock — the *Me'-wuk* proper, inhabiting the Sierra foothills from the Middle Cosumnes southward to Fresno creek, and the *Mew'-ko*, inhabiting the adjacent interior plain from a few miles south of the lower part of American river southerly to Tuolumne river.

It is an interesting fact, as showing how both Indians and whites may be influenced by the same physical features, that the present boundary between the valley and mountain counties — the line separating Sacramento, San Joaquin, and Stanislaus counties of the plain from Amador, Calaveras, and Tuolumne counties of the foothills and mountains, coincides almost exactly with the time-honored boundary between the Mewko and Mewuk tribes.

THE MEWUK SUBFAMILY

The *Me'-wuk* subfamily occupies the timbered foothills and lower mountain slopes and valleys of the west flank of the Sierra from Middle fork of Cosumnes river southerly (following the trend

of the mountains) to Fresno creek — a distance in an air line of about 110 miles. The breadth of their territory averages about 30 miles, beyond which narrow tongues follow some of the river valleys for 15 or 20 miles to the eastward, penetrating well into the mountains — as along the Tuolumne and Merced rivers.

The Zone position of the Mewuk tribes, as pointed out by me several years ago,[1] is Upper Sonoran and low Transition. Most of them occupy the Digger Pine belt (dominant tree *Pinus sabiniana*); the remainder the lower edge of the Ponderosa pine belt (dominant tree *Pinus ponderosa*).

The Mewuk Tribes

The Mewuk people may be divided into three principal groups or tribes, of approximately equal extent and degree of differentiation, which, for lack of better names, are here called Northern, Middle, and Southern Mewuk. Their word or name for 'people' — by which they always mean their own people — is, in the northern division, *Me'-wuk*; in the middle division, *Me'-wah*; in the southern division, *Mĕ-wĕ* or *Mew'-wah*. The members of these tribes or supertribes have no names for themselves but are commonly known by the names of their principal rancherias or villages. They often called one another after the points of the compass, as *Tam'-moo-lek* or *Tah-mah-lā'-ko*, from *tah'-mah* north; *Choo'-mat-tuk*, *Choo-ma-to'-ka*, from *choo'-match* south.

The villages are of two classes: (1) those in which the families of the head chiefs — the *Hi-am-po-ko* or "Royal families"—reside, and (2) those inhabited solely by the common people. The position of head chief is hereditary, and may descend from either father or mother to oldest son (or in some cases to a daughter). The head chief, called *hi-ah'-po* by the northern Mewuk (or if a woman, *mi'-ang-ah*), is a person of standing, power, and influence in the tribe, is recognized as head chief by the tributary villages, and must always be a member of a "Royal family."

The chiefs or "speakers" of the minor villages, called *le-wa'-pe* by the Northern Mewuk and *ā'-oo-che* by the Middle Mewuk, are chosen from the common people and have no authority save in their own villages.

[1] *Science*, n. s. XIX, 912–917, June 17, 1904.

The villages of the first class are of much consequence; they are the places where the principal ceremonies are held; their names dominate the surrounding country and are used by the inhabitants of the adjacent minor villages — instead of their own local names — to designate the people and place to which they belong. Thus, if a resident of a minor village is asked the name of his tribe or home he gives the name, not of his actual residence but of the head village to which his village is tributary.

But this is not all, for the name of a village of the first class is applied not only to the village itself, to its inhabitants, and to the inhabitants of the minor villages tributary to it, but also to a definite tract of country, often of considerable size, constituting the domain of the tribe. Thus *Ah-wah'-ne* was the name of the principal village in Yosemite valley — the home of the great chief Tenia (Tenni'-ah); it was also the name of the valley itself, and of the inhabitants of all the villages, nearly a dozen in number. *Chow-chil'-lah* is a similar case. The name is that of a village of the first class, situated in Chowchilla canyon; it is applied also to the inhabitants of all the tributary villages, of which there were many, and to a large tract of country, dominated by these people — a tract reaching from Fresno creek on the south to Merced river on the north.

These primary divisions were the political, social, ceremonial, and geographic units of the Mewuk; their importance therefore can hardly be overestimated. Whether they should be regarded as tribes or subtribes is of less consequence. For the present I prefer to consider them as subtribes, though by no means disposed to quarrel with those who would hold them as tribes.

The tribal divisions I have adopted are based on similarity of language, it having been ascertained that while each village unit has dialectic peculiarities of its own, all of the village units may be assembled in three closely related linguistic groups, as follows:

THE NORTHERN MEWUK

The territory of the Northern Mewuk begins on the Middle fork of Cosumnes river and extends southerly to or a little beyond Calaveras creek. Its northeastern corner pushes across the Middle Cosumnes to Grizzly Flat whence its eastern boundary runs south-

erly to a point a little west of Big Trees, passing a few miles east of the present settlements of West Point and Railroad Flat. The easternmost settlement in the Mokelumne river region was *Pek-ken'-soo*, about four miles east of West Point.

The western boundary follows the lower border of the open forest of Digger pines and blue oaks from near Michigan Bar to May (near Carbondale), and thence, southerly, passing a little west of Ione, Buena Vista, Lancha Plana, and Comanche. The southern boundary is not so clearly defined but lies a little south of a line drawn from San Andreas to Mountain Ranch (otherwise known as Eldorado) in Calaveras county.

The hunting territory claimed by the Mewuk extends only about ten miles east of the villages. Beyond this they say that the country belongs to the Washoo — whom they call *He'-să-tuk*, meaning 'up east people' (from *he'-sum*, east). They call the Piute *Koi'-yu-wăk* or *Koi-aw'-we-ek*, from their fondness for salt, *koi'-ah*. By their neighbors on the north (the Nissenan) they are called *Ko'-ne-u-kon'-ne*.

Following are the names and locations of some of the villages of the Northern Mewuk:

Tam-moo-let-te-să, near Oleta.
Omo, at Omo ranch.
No-mah, at Indian Diggings.
Chik-ke'-mĕ-ze, at Grizzly Flat.
Kun-nŭ'-sah, at West Point (also called *Mas'-sing wal'-le mas-se*).
Pen-ken'-soo, 4 miles east of West Point.
Hă-e'-nah, at Sandy Gulch, 2 miles south of West Point.
Hă'-chă-nah, at Railroad Flat.
Saw'-po-che, at Big Flat, 5 miles west of West Point.
Witch-e-kol'-che, near Rich Gulch (called *Ahp-pan-tow'-we-lah* at West Point).
Mo-nas-sŭ, 1 mile east of Mokelumne Hill.
Tă-woo-muz'-ze and *Yu'-yut-to*, on Government reservation 4 miles northeast of Jackson. (*Tă-woo-muz'-ze* sounds like a Piute name.)
Pol-li'-as-soo, at Scottsville, 1½ mile south of Jackson.
Yu-lo'-ne, at Sutter Creek (where the town of Sutter Creek now is).
Yu-lĕ, at old mill 1 mile west of Plymouth.
Chuk-kan'-ne-sŭ, at Ione.

Ŭ-poo'-san-ne, 1 mile south of Buena Vista.
Hoo-tah'-zoo, about 1 mile west of San Andreas.

THE MIDDLE MEWUK

The territory of the Middle Mewuk (or Me'-wah) begins on the north on or near Calaveras creek and extends southerly to Tuolumne river, which it follows easterly to a little beyond Hetch-hetchy valley. The western boundary runs southeasterly from near Jenny Lind to La Grange on Tuolumne river.

Following are the names and locations of some of the villages of the Middle Mewuk:

Yung'-ah-ko'-to, 1 mile below Averys (between Big Trees and Murphys).
Kut-too-gah, 1 mile north of Murphys.
Hang-e'-we-e, on McKinney ranch, 14 miles northeast of Columbia.
Kah'-win-oo'-chah, on McCormick ranch, between North and Middle forks of Stanislaus river.
Tahk'-ā-mah, on main Stanislaus near old bridge (between McCormick and McKinney).
Ă-goot-ta-nuk-ka (or *'Koot-tă-nuk-ka*), 2 miles west of Vallecito.
Ko-sā'-mah-no'-noo, on Sixmile creek near Vallecito.
Wŭ'-ye, at Robinson's Ferry on Stanislaus river.
Te-baw-to-yah, on south side Stanislaus, 2 miles up river from Carson Hill.
Po'-tah, at Springfield (3 miles northwest of Sonora). Largest village.
Pā'-pah-lā'-no, at old Sonora Camp, 1 mile north of present Sonora.
He-le-oo (also called *Koo'-loo-te*), at Sonora (present rancheria).
Kes'-sah, at Phœnix Lake reservoir.
Hung'-ah, at Bald Rock, northeast of Soulsbyville (old original village).
Tā'-les-sā'-nah, present Bald Rock rancheria, 2½ miles northeast of Soulsbyville.
Kahp'-pah-nin'-nah, 2½ miles southwest of Jamestown.
Ko-tup'-plan-nah, at Rawhide, 2 miles northwest of Jamestown (across Table mountain).
Hetch-hetch'-e, in Hetch-hetchy valley on Tuolumne river.

THE SOUTHERN MEWUK

The territory of the Southern Mewuk (or Mew'-wah) extends from the south side of Tuolumne river southward to Fresno creek. On the east it pushes up the Merced to include Yosemite valley

and Wawona, and on the west passes southeasterly from a little south of LaGrange to near Raymond. The Chowchilla subtribe — apparently the largest and most powerful division of the Southern Mewuk — claim the country from Fresno creek to and beyond Mariposa creek, and from the easternmost limit of the tribe westerly to a point a little west of *No'-watch* rancheria, which is about 2 miles south of Indian peak (about 5 miles from Grub Gulch).

Following are the names and locations of a number of villages of the Southern Mewuk:

Tap-pin-ah'-go, on Big creek, 2 miles northeast of Groveland.
Pahng-ah-hung-che, at or near Garrote.
Ap'-lă-che, near *Pahng-ah-hung-che* (Garrote).
So-pen'-che, on Bull creek (east of Coulterville).
Ah-wah'-ne, near foot of Yosemite fall in Yosemite valley.
Pal-lah'-chan, at Wawona.
Sut-pōk, at Hites Cove.
How-wi-ne, at Cold Spring.
Chow-chil'-lah, in Chowchilla canyon.
Hitch-ă-wet-tah, 3 miles above Wassama.
Was-sa'-ma, on Wassama creek near Ahwahne stage station.
Ah-pah'-sah, at Fresno Flat (on north side Fresno creek).
Sĕ'-saw-che, at Horseshoe bend on Merced river (village occupied both sides of river).
Kit'-te-wĕ'-nah, one mile above (east of) *Ow'-wal*, on Merced river.
Yah-wo'-kah-che, on Merced river halfway between *Kit-te-wĕ'-nah* and *Ow'-wal*.
Ow'-wal, at big water hole on Merced river at head of Pleasant valley.
Kuk'-kah-hoo-lah'-che, on Merced river in lower part of Pleasant valley.
Wil'-le-to, at pool on Merced river at Barret ranch, just below Pleasant valley.
O-wel'-lin haht'-te hŭ, on Merced river 1 mile above dam of Exchequor mine.
Ang-ĕ'-sa-wā-pah, on south side of Merced river opposite *He-kā'-nah*.
He-kā'-nah, on north side Merced river near Exchequor mine dam.
Koo-yu'-kah-che, on Merced river 3 miles above Merced falls.
Al-low'-lah-che, on Merced river 1½ mile above Merced falls.
Si-ang'-ah-se, at base of mountain of same name between head of Pleasant valley and LaGrange (near corner where Stanislaus, Tuolumne, Merced, and Mariposa counties come together).

Ko'-yo-che (salt people), 1½ mile from *Si-ang'-ah-se*.
Wal-lang'-te, location uncertain. (A former chief was called *Lo-tān'-yo* by the Spanish Mexicans).
Chahm-hahn'-che, on Mariposa creek in lower timber (on old road).
Lĕ'-ham-mit-te, on Mariposa creek in lower timber.
He-hut-to-che, " " " "
Tin-pă'-nah-che, " " " "
Nok'-too-tah-che, " " " "
Nut'-choo-che, " " " " (near present town of Mariposa).
Wahk-kal'-loo-tah-che, on Mariposa creek in lower timber.
Kos'-soo-mah-te, " " " " (½ mile above Mariposa).
Pe-loo'-ne-che, on Mariposa creek in lower timber.
Wā-hil-to, near Grub Gulch.
Ol'-we'-ah, 2 or 3 miles south of Indian peak, about 5 miles from Grub Gulch.

THE MEWKO SUBFAMILY

The tribes inhabiting the lower Sacramento and Joaquin plains, like the Mewuk of the foothills, had no collective name for themselves, but unlike the Mewuk had definite tribal names. In the absence of a group name they may be called *Mew'-ko* from *Me-u'-ko*, their word for their own people. They are now so nearly extinct that it is more accurate to speak of them in the past.

The territory of the Mewko began a few miles below the mouth of American river and reached south to Tuolumne river. Its eastern boundary ran from a point on Cosumnes river near Michigan Bar south to Calaveras river and thence southeasterly to near Knights Ferry on Stanislaus river, and to a point a little west of LaGrange on Tuolumne river. Its western boundary is uncertain. We know that Mewko tribes followed the east bank of Sacramento river southerly and southwesterly to its mouth at Suisun bay, occupying the islands between the Joaquin and Sacramento westerly all the way to the "big water"; that they inhabited the east side of the San Joaquin river continuously from the Tuolumne northward, and that at least one tribe — the *Han-ne'-suk* — lived west of the San Joaquin. It is almost certain that other tribes west of the San Joaquin — as the *Yetchachumne*, who lived between the San Joaquin and Mt

Diablo — belonged to the same group. These western tribes have been so long extinct that I have not been able to obtain trustworthy information as to their boundaries and relationships.

The territory of the Mewko was about 70 miles in length (north and south) and 30 to 40 in average breadth east of the San Joaquin river. But just north of latitude 38°, where a long tongue, comprising the *O'-che-hak* and *Wi'-pā* tribes, pushed westerly to Suisun bay, its breadth was fully 50 miles; and if, as seems almost certain, the tribes between the San Joaquin and Mt Diablo range belonged to the same family, the average breadth must have been close to 50 miles.

The Zone position of the Mewko tribes is Lower Sonoran, all except the Wipa occupying the hot plain of the lower Sacramento and lower San Joaquin rivers.

The Mewko Tribes

The Mewko tribes concerning which I have succeeded in obtaining original information are the *Hul-poom'-ne*, *Mo-koz'-um-ne*, *Mo-kal'-um-ne*, *Chil-lum'-ne*, *Si-a-kum'-ne*, *Tu-ol'-um-ne*, *O'-che-hak* (or *O-che-kam'-ne*), *Wi'-pā*, and *Han-ne'-suk*.

All of these tribes spoke dialects of a common language. The *Yatch'-a-chum'-ne* probably belong with them.

THE HULPOOMNE

The *Hul-poom'-ne* occupied the east bank of the Sacramento river from a few miles south of the mouth of American river southward to the Mokozumne territory. Their principal rancheria was at or near the present town of Freeport, 9 miles south of Sacramento.

THE MOKOZUMNE

The *Mo-koz'-um-ne* (pronounced *Mo-koz'-zum-me*) occupied an extensive area to the south and east of the Hulpoomne, embracing the lower Cosumnes river and Deer creek, and extending from the Sacramento river easterly to near Michigan Bar. Cosumne, Slough House, Elk Grove, Franklin, Cortland, and Walnut Grove are in their territory. They are called *Ti'-nan* (west people) by the *Nis'-se-nan'*, and *Kaw'-so* by the *Pā'-we-nan*.

The Mokozumne, with the possible exception of the Siakumne,

were the largest of the Mewko tribes and comprised the largest number of villages. Their center of distribution and density of population was along the lower Cosumnes and Deer creek, from Slough House down. In this region were the following villages:

Yoom-hoo'-e, at place now occupied by graveyard on knoll near Slough House, 1 mile below present Cosumne postoffice.

Yaw'-mit, on east bank Cosumnes river directly across from Sheldon's ranch.

Lool'-le-mŭl, on Deer creek near Sheldon's barn.

Soo-ke'-de-de, on southeast side Cosumnes river 1½ mile below *Yaw'-mit*.

Mi'-ă-man, on southeast side Cosumnes river 3 miles below *Soo-ke'-de-de*.

Low'-we-mŭl, on northwest side Cosumnes river opposite *Mi'-a-man*.

Choo-yoom'-kă-dut, on northwest side Cosumnes river 1 mile below *Mi'-a-man*.

Kah-kahm'-pi, on northwest side Cosumnes river ½ mile below *Choo-yoom'-kă-dut*.

Soo'-poo, on northwest side Cosumnes river 3 miles below *Choo-yoom'-ka-dut*.

Too'-koo-e, on northwest side Cosumnes river 5 miles below *Soo'-poo*.

Chah'-woh, on northwest side Cosumnes river ¼ mile below *Too'-koo-e*.

Tan'-nah-mah, on plain between Sacramento and Cosumnes river.

Ko-lo'-ne, on plain on southeast side of Cosumnes river.

Oo-moo'-chah, at Elk Grove.

So-lo'-lo, seven miles below Elk Grove.

Yu', a little northeast of Elk Grove.

Higher up the Cosumnes were two others:

Pal'-lam-mah, on Cosumnes plain — probably on Cosumnes river near Michigan Bar, which place in the Nis'senan language is *Pal'-lam-mŭl*, meaning 'valley oak place' (from *pal'-lam*, the valley or water oak, *Quercus lobata*).

Lo-pah-tah'-tah, on Cosumnes river near timber (may have been Mewuk).

The *Talatui* of Dana was a Mokozumne band which I have not yet been able to locate.

THE OCHAKUMNE

The *O'-che-hak* or *O'-che-hă-kum'-ne* (slurred to *O'-chă-kum'-ne*) occupied islands (apparently Brannan and Grand islands) between the San Joaquin and Sacramento rivers, above the Wipa and below the Mokozumne.

THE WIPA

The *Wi'-pă* occupied *No'-yoop* or Sherman island, between the mouths of the Sacramento and San Joaquin rivers immediately east of Suisun bay, and are the westernmost tribe of which anything positive is known.

THE HANNESUK

The *Han-ne'-suk* lived south or southeast of the Wipa. Their principal village was "on a big river"—doubtless either the main San Joaquin or one of the large branches that traverse the tule marshes, of which West Channel well fits the required direction. Their language was essentially the same as that of the Wipa and Mokozumne. They were near neighbors of the Yatchachumne, and lived between them and the Wipa.

THE YATCHACHUMNE

The *Yatch-ă-chum'-ne* lived west of the San Joaquin river, between Stockton and Mt Diablo, and ranged thence southerly—how far we do not know.

They are the only tribe included in the present paper concerning which I have not obtained original information from neighboring tribes. That they were closely related to the associated tribes here mentioned is at least probable, though perhaps not susceptible of proof.

According to the authorless *Illustrated History of San Joaquin County, California*, published in 1900, the *Yacheko* or *Yachekumnas* pushed eastward across the San Joaquin river between Calaveras river and French Camp creek and had a village near the place now occupied by Stockton. In this connection it should be borne in mind that Stockton is at the corner point where the *Chilumne*, *Yatchachumne*, and *Siakumne* tribes met, and that the ground has been claimed by each of these three tribes.

THE MOKALUMNE

The *Mo-kal'-um-ne* (*Muk-kel'-lum-ne* or *Muk-kel'-ko*) occupied the south side of Mokelumne river from a little above Lockford westerly past Lodi and Woodbridge to the San Joaquin tules. Their principal village, *Muk'-kel* (from which the tribe takes its name),

was on the bottomland a mile and a quarter west of the present site of Lockford, and was inhabited within the memory of many persons now living. Another village was situated on the same (south) side of the river a little higher up (east of Lockford) on the way to Clements; it was abandoned earlier than *Muk'-kel.*

Lā-lum'-ne, a rancheria near Clements (on the south side of Mokelumne river a little below the present bridge and a little back from the river), may be included under the Mokalumne tribe as its inhabitants spoke the same language.

THE CHILUMNE

The *Chil-um'-ne* (pronounced *Chil-lum'-ne*) occupied the lower Calaveras River country and reached north to the territory of the Mokalumne. The boundary between the two was a nearly east and west line between the Calaveras and Mokelumne rivers, but a little nearer the Mokelumne. The Chilumne reached from the San Joaquin tules easterly to a little beyond Linden. The present city of Stockton is in the southwest corner of their territory, at the point where the Chilumne, Siakumne, and Yatchachumne come together. Their language is essentially the same as that of the Tuolumne, and only slightly different from the Mokalumne.[1]

THE SIAKUMNE

The *Si'-ā-kum'-ne* occupied a broad belt between the Calaveras and Stanislaus rivers, beginning on the north at or near Stockton and extending southerly to Stanislaus river and easterly to Knights Ferry.

THE TUOLUMNE

The *Tu-ol'-um-ne* (*Tow-ol'-lum'-ne*) occupied the territory between the lower Stanislaus and Tuolumne rivers and extended from the San Joaquin tules on the west easterly to or a little beyond Knights Ferry on Stanislaus river.

THE INNEKO FAMILY

The *In-ne'-ko* family comprises two disconnected and quite different subfamilies — the *Hoo'-koo-e'-ko* of the coast region north of

[1] I am aware that the Chilumne have been referred to Yokuts stock, but a survivor of the tribe tells me that their language was almost identical with that of the Tuolumne.

San Francisco bay, and the *Tu'-le-am'-me* of the interior hill country south of Clear lake. The Tuleamme are somewhat intermediate between the Hookooeko of the coast region and the Mewko of the great interior valley, but their affinities with the Hookooeko are much the closer.

There being no recognized name for the family, I have adopted the word *In-ne'-ko*, which in the languages of the tribes north of San Francisco bay means 'the people,' or 'all the people.'

THE TULEAMME SUBFAMILY

The *Tu'-le-am'-me* (or *Tu'-le-yo'-me*) subfamily occupies a small isolated area among the Coast ranges of Lake and Napa counties. It is entirely cut off from other members of the stock and completely surrounded by tribes speaking widely different languages. To the north are the *Koi'-im-fo* of Lower lake; to the east and southeast the *Pat'-win*, a Wintoon tribe; while to the south and southwest, separating the Tuleamme from their relatives on the coast, are two stocks — first, the *Mi-ah'-kah-mah* or "*Wap'po*," inhabiting Alexander, Knights, and upper Napa valleys; and beyond these the *Kan-a-mă'-ra* of Russian River valley and the Santa Rosa plain. To the northwest are tribes of the so-called "*Pomo*" stock.

The territory of the Tuleamme extended from the south end of Lower lake southward to Pope valley — a distance in an air line of barely 25 miles. The center of distribution was Coyote valley on Putah creek and the neighboring smaller valley of Wennok lake. The country of the Tuleamme therefore was farther north than that of any other division of the Mewan stock, and there is no reason to believe that the stock ever reached any more northerly point.

The people have no tradition of any migration, but on the contrary stoutly maintain that they have "always" lived in the area above defined. Indeed, their creation myth fixes their origin at a point in the low hills about 3 miles south of the lower end of Clear lake. This place is the site of an ancient rancheria, called *Tu'-le-yo'-me po-koot*, which persisted until recent years but is now extinct. I have adopted its name for that of the subfamily. The subfamily comprises only a single tribe — unless the principal villages are held to be tribes.

THE TULEAMME OR OLAYOME

The members of the tribe have no tribal name for themselves but like the Mewuk call themselves after their principal villages. They may be named *Tu'-le-yo'-me* (or *Tu'-le-am'-me*) the same as the subfamily, or if preferred may be called *O'-lā-yo'-me* (or *O'-lā-am'-me*) after their principal village in Coyote valley. *O'-lā-am'-me* means 'Coyote people.'

The villages and their locations, according to the remnant of the tribe still living, were:

Tu'-le-yo'-me po-koot, about 3 miles south of Lower lake (the most ancient settlement of the tribe).

Lah-ki'-yo-me po-koot, near present town of Middletown.

Kil'-le-yo'-ke po-koot, at north end of Coyote or Guenoc valley.

O'-lā-yo'-me po-koot, in northern part of Coyote valley half a mile south of *Kil'-le-yo'-ke* but north of Guenoc.

Sah'-ti-yo-me po-koot, in a rocky place at south end of Coyote valley, about 2 miles south of Guenoc.

Hoo-koo'-yo-me po-koot, on knoll on southwest bank of Putah creek in Phelan Ranch valley. The people call themselves *Yo-me-ko'-tsah*. The last remnant of the tribe now inhabits this rancheria.

Hoo-koo'-too-mi po-koot, on east side of Putah creek less than ¼ mile north of Phelan ranch house.

Hol'-wah po-koot, on west side Putah creek close by present barn at Phelan ranch house.

Kā-boot' po-goot, on low point east of north end of Wennok lake.

Sahl'-sahl po-goot on flat at base of Cone peak (*Loo-peek' pow-we*) at southeast corner of Wennok lake.

Haw'-hawl po-goot, on north bank of outlet of Wennok lake, near the lake.

Tso'-kew po-goot, in Pope valley.

Wo-de'-di-tep'-pe po goot, in Jerusalem valley.

The Tuleamme are called *E-lōk-no'-mah* (or *Lōk'-no'-mah*) by the Wappo, and *Te'-om-fo* and *Kel-lew'-win-fo* by the *Koi'-in-fo* (or 'Ham-fo) of Lower lake. *Kel-lew'-win-fo* means "Coyote people.'

THE HOOKOOEKO SUBFAMILY

The *Hoo'-koo-e'-ko* subfamily occupied the coast country from the north shore of Golden Gate and San Pablo bay northerly to

Duncan point, 4 miles south of the mouth of Russian river — a distance in an air line of about 50 miles. They belong to the Transition zone.

The subfamily comprises three tribes — the *O-la-ment'-ko* of Bodega bay; the *Lek-kah'-te-wut'-ko* of the open hill country from Freestone to Petaluma; and the *Hoo'-koo-e'-ko* of the region thence southward to San Francisco bay.

THE OLAMENTKO

The territory of the *O-la-ment'-ko* begins on the north at Duncan point, 4 miles south of the mouth of Russian river, and reaches southerly only to Valley Ford creek, in the open hill country midway between the mouths of Bodega and Tomales bays. The home of the *Olamentko* therefore was a very small area, only about ten miles in length along the coast, and not more than 8 or 9 miles in breadth at the widest part. The tribe lived mainly on the shore, going inland at certain seasons to hunt and gather acorns. Their center of distribution was *Yo'-le tam'-mal* — Bodega bay — which was encircled by their villages. The farthest seaward was at *Te'-wut hoo'-yah* (meaning 'willow point') on Bodega Head; another was on the bar, now partly washed away, at the entrance to the bay; and others were scattered about the shores at frequent intervals, particularly on the east side. From this center the villages followed the coast north to *Pool'-yah lă-kum* at the mouth of Salmon creek, and south to *Ah-wah'-che* at the mouth of Valley Ford creek.

The Olamentko are called *Ah'-kum-tut'-tah* by the Kanamara.

THE LEKAHTEWUTKO

The territory of the *Lek-kah'-te-wut'-ko* extended easterly from Freestone to a point about a mile north of Petaluma. It lay east of the *Olamentko* and north of the *Hookooeko*. The language was essentially the same as that of the *Hookooeko*. The principal villages were *Lek-kah-te-wut*, about a mile north of Petaluma, and *Po-tow'-wah-yo'-me*, at Freestone. *Po-tow'-wah-yo'-me* was on the old Indian mound just east of the present railroad station at Freestone, and was inhabited until some time in the eighties — till about

1885 I am told. There was also at least one other village, near Valley Ford.[1]

The Lekahtewut are called *Pet-ă-loo-mah-che* by the Kanamara, and *Ōn-wal'-le-sah* by the Wappo.

THE HOOKOOEKO

The territory of the *Hoo'-koo-e'-ko* extends from Valley Ford creek southerly to the Golden Gate, and from Point Reyes peninsula easterly to Petaluma marshes and San Pablo bay. Its northern boundary ran from Valley Ford creek easterly to a point about a mile north of Petaluma — the same line forming the southern boundary of the *Olamentko* and *Lekahtewut*. The present bounds of Marin county are almost — but not quite — coextensive with the *Hookooeko* territory. Mount Tamalpais and the series of beautiful valleys about its base, from San Rafael on the east to Olema on the west, and the long, fiord-like Tomales bay all belonged to the *Hookooeko;* and some of the most familiar geographic names in California were taken directly from the vocabulary of the same tribe.[2]

It is of historic interest that the *Hookooeko* were the first west coast tribe to be discovered by Europeans. When Sir Francis Drake, in the summer of 1579, sailed along the south side of Point Reyes peninsula and put into the broad bay that now bears his name, he spent several weeks in their country and was much impressed by their friendliness and singular customs.

[1] Capt. M. C. Meeker of Occidental, Sonoma county, tells me that in the winter of 1861 or 1862 he witnessed a cremation near Valley Ford rancheria. Attracted by the loud wailing of the Indians he went to the spot and found them engaged in burning the body of a child.

[2] Among such names are Tamalpais, from *Tam'-mal* the bay country, and *pi'-es* a mountain (*Tam'-mal-pi'-es* or *Tam'-mal-pi's* is their own name for the mountain); Tamales bay, from *Tam-mal* the bay country (*Tam-mal hoo-yah*, Tamales point; *Tam-mal-ko*, the people on Tamales bay in distinction to those of the interior); Olema, from *O-lă'-mah* the name of the place; Marin county, from *Marin*, a great chief of the *Hookooeko* tribe; Novato, from *No-vah'-to* another chief. The name Petaluma appears to have come from the Kanamara tribe on the north. Other familiar Indian place names on the north side of the bay region are Sonoma, Napa, Suskol, and Suisun — all original names for the same places in the language of the *Poo'-e-win*, the tribe next east of the Hookooeko. Mt Tamalpais is the only mountain in the land of the Hookooeko, but two others are visible — Sonoma peak which they call *Oo'-nah-pi's*, and St Helena, which they call *Chitch'-ah-pi's*.

A few of the many villages of the *Hookooeko* were:

Etch'-a-tam'-mal, at or near the present site of Nicasio.
Ah-wan'-me, at or near San Rafael.
Cho'-ketch-ah, at or near Novato.
Le'-wan-nel-lo-wah', at or near Sausalito.
Sāk'-lo'-ke, on the long point on east side of entrance to Tamales bay.
Oo'-troo-mi-ah, near present town of Tomales.
O-lā'-mah, near present town of Olema.

There were numerous others, along both shores of Tomales bay, and at various points in the interior valleys.

Present Status of the Tribes

Of the seventeen tribes comprising the Mewan stock, the three Mewuk or Sierra tribes are each represented by a considerable number of living men and women; the Tuleamme of Lake county by possibly half a dozen persons; while all of the valley and coast tribes, thirteen in number — namely, the Olamentko, Lekahtewut, Hookooeko, Hulpoomne, Ochehak, Wipa, Hannesuk, Yatchachumne, Mokozumne, Mokalumne, Chilumne, Siakumne, and Tuolumne — are either already extinct or are represented by only one or two survivors.

The conclusion is obvious, namely, that the resisting power of the tribes depends, not on numbers, not on extent of territory, not on aggressive or defensive habits, but solely on degree of accessibility to the whites. Contact with whites is deadly; the Indians cannot hold out against it, and the rapidity of their disappearance is directly proportionate to the closeness and duration of the contact. Thus the valley tribes within easy reach of the early Spaniards were swept away first; the coast tribes, next in accessibility, were next to perish; while the Sierra tribes, inhabiting a rough mountainous country, were able to hold out longer and still survive in considerable numbers, though long since reduced to a miserable remnant of their former strength.[1]

[1] For a discussion of the rate, amount, and causes of decrease of California Indians, see my paper entitled The Indian Population of California, *American Anthropologist*, vol. 7, pp. 594–606, 1905.

THE MAP

The tribal boundaries given on the accompanying map (plate xxv) are believed to be in the main correct. There is no doubt, however, as to the limits of the *Hannesuk* and *Yatchachumne*, as to the northern boundary of the *Lekahtewut*, and as to both northern and southern boundaries of the *Ochehak*.

BIOLOGICAL SURVEY,
WASHINGTON. D. C.

PRECOLUMBIAN ELEPHANT MEDALS FOUND IN MINNESOTA

By N. H. WINCHELL

In one of the archeological volumes of the late J.V. Brower he has published an account of the discovery of a remarkable bronze medal bearing date 1446. It was found by Mr Howard W. Crosby in an old Indian trail in "Pine cooley," near Hastings, Minnesota. Mr Brower introduced a plate showing both sides of the medal,[1] and his remarks lead to the belief that it was of Indian origin and is to be classed with other discoveries that have been reported showing that the Indians had knowledge of the elephant. It is well known to archeologists that pipes of catlinite shaped like the elephant have been discovered in Iowa, also that a so-called "elephant mound" in Wisconsin has been much debated, since it is situated in the region of the effigy mounds of the Northwest. Later some fragments of elephants' (or mastodons') tusks have been exhumed from a mound in Wisconsin by a representative (Norris) of the Bureau of American Ethnology.

Since the publication of Mr Brower's volume two other bronze medals of identical size and figure have been discovered — one at Grand Forks, North Dakota, the other, as reported, at St Cloud, Minnesota.

The coexistence of man and the mastodon, or mammoth, in America, as in Europe, has advanced now beyond the stage of presumption, and has been so well verified that it can hardly be excluded from the realm of science.[2] Still it is necessary to exercise care in the use of facts brought to light that seem to bear on this question.

I have seen Mr Crosby's and Mr Kennedy's medals, and can

[1] *Minnesota*, pl. IX.

[2] Prof. W. B. Scott, in *Scribner's Magazine* for April, 1887, has exhaustively reviewed the evidence of the late existence of the elephant in America, and has concluded that not many centuries ago the elephant was an important element in American life.



MEDAL FOUND BY MR H. W. CROSBY NEAR HASTINGS, MINNESOTA

vouch for their genuineness. They were certainly beyond the skill of the Minnesota aborigines, both in the metallic alloy of which they are composed and in the mechanical execution of the embossing, to say nothing of the Roman characters and the correct Latin in which they are inscribed. They can have therefore no relation to aboriginal elephant pipes or to elephant mounds, and hence, though they were molded prior to the discovery by Columbus, they cannot be accepted as evidence that the Indians were familiar with the great pachyderm.

In searching for some explanation of the origin of these medals, and of their occurrence in America amongst the Indians, I have been aided by Judge George B. Young, of St Paul, and by Prof. Igino Sapino, director of the National Museum, Bargello, Florence, Italy. I have been permitted to use here a copy of a letter written by Judge Young to Mr H. P. Upham of the Minnesota Historical Society, published in the *Hastings Gazette* of December 17, 1904, which shows the Italian origin of these medals.

ST PAUL, *Nov. 15, 1904.*

DEAR UPHAM:

The medal which you showed me this morning, and which was recently dug up at Grand Forks, was undoubtedly issued in honor of the Lady Isotta of Rimini. Such is the plain meaning of the inscription on the obverse of the medal, namely, "D· Isottæ Ariminensi," the letter *D*· doubtless standing for *Dominæ*. The date on the reverse, 1446, in Roman numerals, is no doubt the date on which the medal was struck.

Sigismondo Malatesta, Lord of Rimini, although already married, fell madly in love with the Lady Isotta, who was celebrated for her beauty, intellect and culture, and continued until the end of his life the object of his adoration. She became his mistress and bore him several children in the lifetime of his first and of his second wife; and when he became a second time a widower she became his wife.

In the year 1446 Sigismondo Malatesta began the construction of the remarkable church of San Francesco at Rimini. In one of the chapels of that remarkable church there still remains the splendid and fantastic tomb erected to Isotta in her lifetime. The urn of her sarcophagus is supported by two elephants, and bears the inscription, "*D· Isottæ Ariminense, B· M· sacrum MCCCCL.*"

The *D*· has been interpreted by some as *Divæ*, goddess, or divine, and *B· M*· as *Beatæ Memoriæ* (of Blessed Memory); others, unwilling to credit such impiety, hold that *B· M*· is *Bonæ Memoriæ* (of Good Memory). How-

ever this may be, the *D·* may well be interpreted as standing for *Dominæ*, both on the urn and on the medal. It will be noticed that the elephant is common to the tomb and to the medal.

Sigismondo Malatesta died in 1468; Isotta in 1470.

Signed (JUDGE GEO. B. YOUNG).

To H. P. UPHAM, ESQ.

The accompanying plate XXVI illustrates the medal of Mr Crosby. Plate XXVII shows the sarcophagus of Isotta, mentioned by Judge Young, from a photograph procured in Italy by Mr E. A. Whiford and furnished by Mr Crosby. The church dates from the thirteenth century, but its present condition is due to a reconstruction by Malatesta in the fifteenth century in honor of Isotta.

A letter from Professor Sapino, as translated by M. Giuliani of St Paul, is as follows:

FLORENCE, ITALY, *Jan. 10, 1907.*

DEAR SIR:

That medal which you wrote to me about is the one made by Mattei di Pasti (born 142–, died 1490?). He was an architect and painter. His name was Pandolfo Malatesta Signore di Rimini. He was working as an architect with Leon Battista Alberti at this time on the construction of the St Francis temple at Rimini, and made these medals for Signore Pandolfo Malatesta and for Lady Isotta Atti, and the medal was presented to her in 1446; but I am unable to tell when the medal was brought to America. If it is important to know if the medal is of any value and to trace its history you can see any of the following:

Armand: *I'medaglioni della Rinascenza*, Paris, 1883–1887.
Sapino: *Catalogo delle medaglie nel Tempio nazionale di Firenze.*
Talregg: *Italian Medals.*

IGINO SAPINO,
Director Nat. Museum,
Bargello, Florence, Italy.

I have not been able to consult any of the works referred to by Professor Sapino, but the pleasant little volume of Mrs E. Augusta King, entitled *Italian Highways* (1895), gives an account of a visit to Rimini, in which she describes this temple, or church, of the Malatestas, and dwells on the numerous signs of dedication to Isotta. He "elevated her to the rank of a divinity, and placed all over the church, as if it were some Christian monogram, the initials of her name and his own — I. S. . . . and introduced into the sculptured ornament of the cathedral, inside and outside, his badge of an ele-



SARCOPHAGUS OF ISOTTA

A view from the interior of the church rebuilt by Sigismondo Malatesta at Rimini, Italy, in the Fifteenth Century

phant and hers of a rose, together with his coat of arms, and his portrait, and their monogram."[1]

The foregoing is sufficient to prove the medals to be of Italian origin, and it remains only to call attention to their possible source. It is well known that one of the most efficient and trusted of the companions of La Salle was the Italian Chevalier Henry de Tonty, who was with him at Fort Crevecœur on the Illinois river, whence Hennepin and Michel Accault departed for the purpose of exploring, under La Salle's direction, the upper waters of the Mississippi. This was in March, 1680. In La Salle's letter describing this expedition he states that Accault was furnished with "about a thousand pounds of goods, such as are most valued in those regions." This party was captured and robbed by a band of Sioux Indians in the vicinity of Lake Pepin, and were conducted to Mille Lacs, in Mille Lacs county, Minnesota. The articles usually taken on such expeditions were such as would propitiate the natives — hatchets, knives, tobacco, gaudy cloths and beads, and such articles of personal adornment as rings, bracelets, and medals. There is no mention of medals in the outfit of Accault. It seems probable, however, that he had a number of the Isotta medals, and that they were supplied by Tonty, who was probably not alone a companion of La Salle, but, judging from his independent action and authority, was also in some measure a partner interested in the expected emoluments of La Salle's discoveries.

From Mille Lacs the medals could easily have been scattered anywhere in the northwestern region within the area occupied by the Sioux at that time. None has been found, as yet, within the area dominated then by the Ojibwa.

ST PAUL, MINNESOTA,
April 3, 1907.

[1] See also a late publication: "*Sigismondo Pandolfo Malatesta, Lord of Rimini. A Study of a XV Century Italian Despot.*" By Edward Hutton. New York. E. P. Dutton and Co. 1906.

CAHOKIA OR MONK'S MOUND

By CYRUS THOMAS

There is one fact in regard to the mound group in the Mississippi or "American" bottom, six miles east of St Louis, known as the Cahokia mounds, which has not received that consideration from archeologists and antiquarians it deserves. As is well known, the largest tumulus of the group, called the Cahokia or Monk's mound, is the largest prehistoric earthen structure in the United States.

As this mound has been frequently figured and described — even a model having been cast in iron — a very brief description will suffice for the present purpose. "It is," says Mr David I. Bushnell, Jr,[1] "a truncated rectangular pyramid, rising to a height of one hundred feet above the original surface. The dimensions of the base are: from north to south 1,080 feet; from east to west 710 feet. The area of the base is about 16 acres. Viewed from the east it appears regular in form, and three terraces are clearly defined." The lowest of these terraces, which is the only one necessary for us to notice here, is much the largest of the three, and, according to the author quoted, "is 500 feet from east to west [that is, across the face of the mound], and 200 feet from north to south" — that is, extending outward from the mound. Mr Bushnell does not mention the height of this terrace, but William McAdams[2] states that it is 30 feet. The latter authority gives the dimensions of the base of the mound as 721 feet east and west by 998 feet north and south, and the height 99 feet.

As the dimensions of the base mentioned by Mr Bushnell would make the area 17.5 acres instead of 16, we shall accept those of Mr McAdams. Allowing for the terrace the same under slope against the mound as at the outer surface, the contents would be

[1] The Cahokia and Surrounding Mound Groups, *Peabody Museum Papers*, III, no. 1, 1904.

[2] *Antiquities of Cahokia or Monk's Mound*, p. 1, 1883.

the same as those of a rectangular mass 500 feet long, 200 feet wide, and 30 feet thick; in other words, 3,000,000 cubic feet. This would leave the base of the true mound, following McAdams' measurements, 798 by 721 feet. Assuming the slopes to terminate in a point at the top — which would give less than the true solid contents — the contents of the mound (omitting the terrace) would be 18,987,000; adding the terrace makes the total contents about 22,000,000 cubic feet.[1]

As it is now generally conceded that these prehistoric structures were built by Indians, we have the puzzling problem presented of explaining how this great mass was heaped up by natives who had neither beasts for draft or bearing burdens, nor vehicles for conveying materials, nor iron tools; but must have carried the earth by individual loads, in baskets or native cloth, or in some similar way. Nor is this the only point needing explanation; for it is apparent that the builders must have been able in some way to assemble and operate their forces in a lengthened effort. The method by which they built up these mounds is not a mere supposition, as the lumps or small masses of earth which formed the individual loads have been observed in several instances.

To build up a mound in the manner indicated was slow work; but Mr Gerard Fowke, who has had practical experience in excavating mounds, concludes that a hundred persons, with only the means at hand that the Indians could have employed, could heap an earthern tumulus 100 feet in diameter at the base and 20 feet high in 42 days. As the earth is usually obtained immediately around the base, generally the loose surface soil, Mr Fowke assumes that each person could dig and carry up 25 loads per day, averaging half a cubic foot to the load.

As the contents of the Cahokia mound are equal to 420 times those of Mr Fowke's assumed tumulus, it would require the hundred persons, laboring in the same way, to work every day for forty-eight years to construct the great tumulus. As this is not even supposable, we may assume the tribe was comparatively strong and could put a thousand laborers at the work, who, working at the same

[1] The estimate given by the writer in a previous publication was not only based on lower measurements, but omitted the terrace from the reckoning.

rate, might complete the structure in 4.8, or, in round numbers, 5 years. That no tribe of Indians ever did, would, or could devote five years of constant labor to the erection of a single tumulus, will probably be admitted by every one acquainted with Indian character.

In order to study the question from different points, let us suppose the tribe, or combined tribes if more than one, could put 5,000 persons at the work; it would still require an entire year. As it is not likely that any tribe ever kept 5,000 of the population at work on a single mound continuously for a year, we must resort to some more likely theory.

That Mr Fowke's estimate of the number and size of the loads is reasonable will probably be admitted. Moreover it is applicable to the case in point, as the large depression about the eastern and northeastern base of the mound shows plainly where the material for its construction was obtained. And although digging round the base would have a tendency to exaggerate the height, the natural surface of the ground is very apparent on the southwestern and western sides, from which it seems no earth was taken. That no natural elevation existed here may be assumed without doubt, judging from all the indications. It is evident, therefore, that no material change can be made in our calculation. Slightly increasing the size and number of loads to the individual, would decrease the time, though to a small extent only if the assumption be kept within reasonable limits.

It would seem, therefore, that the only reasonable supposition is that the mound was built up by successive additions. How often these were made, and how much was added at one period, must be wholly conjectural. If we suppose the tribe living at this point to have been a populous one, which was probably the case — say ten or twelve thousand — it is not probable that they would have added more than the equivalent of the great terrace in a season; far more likely not more than half that, as the terrace, calculating on the basis assumed, would have required 5,000 persons at work constantly for 80 days. The work, therefore, when we take into consideration the 65 or 70 other mounds of the group, several of which contain each 250,000 cubic feet of earth, must have been carried on at intervals for several, perhaps many, years.

These facts present some puzzling problems to which we invite the attention of American archeologists and antiquarians — not only those suggested by what precedes, but those bearing on the subject of the probable or even possible builders. The artifacts discovered on the site do not differ in any appreciable respect from those along the banks of the southern Mississippi, especially in southeastern Missouri and eastern Arkansas. Professor W. H. Holmes, the leading authority on ancient American pottery, who has seen Dr Patrick's collections from the group, says there has been found here no type that is appreciably different from the types of the pottery district of the southern Mississippi. We seem therefore to be limited in our search for the builders to a tribe or people found inhabiting more southerly regions at the time of the first coming of the whites. That the mounds of the group are not attributable to the Cahokia or any other Algonquian tribe of Illinois may be asserted with confidence. If it be conceded that we must look to the Southern states for the builders, then it will be agreed that the tribal movement was southward.

Although there are reasons for believing the mounds were covered with timber in the year 1700, there are no indications leading to the conclusion that they belong to a period of great antiquity.

BUREAU OF AMERICAN ETHNOLOGY,
WASHINGTON, D. C.

WILLIAM WELLS NEWELL — 1839–1907

On January 21, 1907, at his home in Wayland, Massachusetts, after a very brief illness, William Wells Newell passed quietly and unexpectedly away. To science and to the circle of his friends and acquaintances the loss is great. The writer of this memorial notice, having known him and worked with him for more than fifteen years, mourns the disappearance of a lovable personality no less than the passing of one of the great figures in the history of anthropological science in America. All who knew him felt the uniqueness of his power to labor and at the same time to stimulate others. He was the happy combination of the *man* with the *man of science*, one who fulfilled the requirements of old Terence — "*Homo sum, et humani a me nil alienum puto.*" Fortunate was it that the foundations of the study of folk-lore as a science in America were laid under his auspices.

Mr Newell had a good ancestry and inherited qualities from both sides. He was born in Cambridge, Massachusetts, January 24, 1839, his father being the Reverend William Newell, long the minister of the First Parish (Unitarian) Church in that city; and his mother, the daughter of Mr Wells, a schoolmaster of the good old type, a man of marked character and influence in his day. After graduating from Harvard in 1859, he studied for the ministry and took his degree from Harvard Divinity School four years later. When he left college, he acted for some months as assistant to the Reverend Edward Everett Hale, and might have spent the rest of his life in social service and allied philanthropic activities had not the exigencies of the country at the time demanded his presence elsewhere.

His pastoral labors began at Germantown, Pennsylvania, where he was beloved and is still affectionately remembered; but soon ended, for he did not find the ministry of such a nature as to make it his life-work. He next turned to the profession of teaching, conducting for some time a private school; from 1868 to 1870 he was Tutor in Philosophy at Harvard University. In 1884 he made his home in Cambridge, devoting himself to private study and research in literature and the new science of folk-lore, in the pursuit of which he rose to eminence. He was, for the rest of his life, a marked example of the scholar and investigator, who had no direct connection with any educational or scientific institution, public

or private. From time to time, however, he delivered before various societies and institutions addresses on subjects of various sorts in the fields of literature and folk-lore. Besides his connection with the American Folk-Lore Society, Mr Newell had relations with several other literary and scientific bodies. He was a Fellow of the American Association for the Advancement of Science, and a member of the American Anthropological Association. He was also an active and valued member of the Authors' Club of Boston, in whose social functions and literary exercises he alike took part; and of the History of Religions Club, where his wide reading and great knowledge of comparative folk-lore and primitive religion made him indispensable to his fellow members. No discussion of such topics was ever complete without his illumining word.

Mr Newell was an accomplished Shakespearean scholar, as the present writer was pleasantly made aware during a performance of one of the great plays by Julia Marlowe one evening in Montreal after the meeting of the American Folk-Lore Society in that city in 1892. His knowledge of the text of the play was extensive and his critical remarks were all to the point. To the *Journal of American Folk-Lore* (vol. XV, 1902) he contributed an article on "The Sources of Shakespeare's Tempest," pointing out the folk-lore element in this and in Ayrer's "Die Schöne Sidea."

Drawn early to the study of the legends of King Arthur and the stories of the Holy Grail, Mr Newell continued an investigator in that field to the day of his death. His translations from Chrestien de Troyes were published in 1897 under the title *King Arthur and the Table Round* (2 vols.), with valuable introduction, interpretative and critico-historical comments, and notes. In this work, of which a flattering review appeared in *The Atlantic Monthly* (vol. LXXX, 1898), Mr Newell set forth the opinion, repeated and amplified in a series of articles on "The Legend of the Holy Grail," contributed to the *Journal of American Folk-Lore* (vols. X–XV), and published as a whole in 1902, that Chrestien of Troyes was the one most important factor in giving shape and body to the Arthurian legends and that the Celts had no prime share in the production of a legendary *fond*, the origin of which had hitherto been commonly and completely attributed to them. This view has not received the approval of European critics, though there is evidently much truth in Mr Newell's contentions.

Mr Newell had a decidedly poetical temperament, and had his development proceeded entirely along literary lines, he might have accomplished much of lasting value in the form of verse. As it was, he did

publish several volumes of poems. In 1881 appeared a translation of the *Œdipus Tyrannus*, and in 1895 *Words for Music*, a collection of 46 of his own poems, a second edition of which, more than doubled in bulk, was published in 1904. In 1900 appeared translations of *Sonnets and Madrigals of Michelangelo Buonarroti.* Mr Newell's "Decoration" poem, dated from New Rochelle, New York, 1878, is a noble piece of verse, deserving place in all anthologies of greetings to the patriotic dead. A beautiful requiem, too, he wrote, but it hardly applies to himself, for many friends now harbor his thoughts after he has gone:

"From northern earth how bloomed this stranger blest?
Beloved and cherished upon Nature's breast.
Shall dear companions sigh above his grave
While forests murmur, and while grasses wave?
Who harboreth his thoughts, now he is gone? —
No second friend; they trusted him alone.
Where gain of life, since he hath found repose? —
May be a bluer sky, a redder rose."

His profound humanity is revealed in a little poem of "Greeting," belonging to the year 1893:

"Beside the tides of Atlantic, that flow so clear and so cold,
By the feet of the shining Sierras, by western Gate of Gold,
Where the billowy seas of the prairie roll green under skies of light,
In glens of the leafy highlands, on fields where the cotton is white;
I hail thee, I greet thee, my brother! Receive the heart and the hand,
In the name of the bountiful parent, the dearly belovèd land!
She weareth the mantle of plenty, she reigneth from sea to sea;
As wide as the realm of the mother the thoughts of the children be."

Besides his literary and poetic gifts, Mr Newell had also a certain mechanical skill, and at his home in Wayland he established a private press from which came or were to come one or two of his minor publications. He was indeed a manysided man in the best sense, and this manysidedness repeated itself in the particular branch of science to which his life was chiefly devoted. In folk-lore he touched topic after topic, without losing sight of the general nexus.

In 1883 Mr Newell published *Games and Songs of American Children* (New York, pp. xii, 242), a work which in its second edition (1903) is still the standard and only comprehensive and authoritative treatment of the subject. Here the importance of such activities of the child in relation to the primitive beliefs and practices of the race is pointed out and their comparative aspect considered. This book has been the *vade mecum* of

all subsequent investigators in this attractive field. In his contributions to the *Journal of American Folk-Lore* Mr Newell several times touched upon the same topic. In the fifth volume (pp. 70–71) he discussed "Knights of Spain" as illustrating marriage by capture, and in the twelfth volume (pp. 292–293) treated of children's games and rhymes from Philadelphia, Brooklyn, etc. In a note (vol. VII, p. 96) on the "Diffusion of Song-games," he maintained that the identity of English and American games is due in part to "the continual admixture caused by immigration," and not alone to descent from common originals. It was in his book on games and songs that Mr Newell expressed the opinion, approved subsequently by Professor F. J. Child, that "the English ballad was already born when Canute the Dane coasted the shore of Britain; its golden age was already over when Dante summed up mediæval thought in the Divina Commedia; its reproductive period was at an end when Columbus enlarged the horizon of Europe to admit a New World; it was a memory of the past when the American colonies were founded." He held, too, as proved by Professor Child's investigations, that, with the possible exception of a few later historical ballads, there is "no such thing as a distinctively Scottish popular song," Scottish ballads being in general "only surviving dialectic forms of old English." The pages of the Journal reveal how successful he was in attempting to gather the still existing remains of English ballads in America. To the *Boas Anniversary Volume*, just issued, Mr Newell contributed a "Note on the Interpretation of European Song-Games," in which he emphasizes the importance of continued culture-contact as a factor in the production of concordance.

In 1888 Mr Newell was busy with the preliminaries for the foundation of a society for the study of folk-lore in America, in accordance with a circular letter issued May 5, 1887. At a meeting held in Cambridge, January 4, 1888, was organized the American Folk-Lore Society, which has reached its present proportions largely through his zealous labors and his unselfish services. Mr Newell was the first secretary of the Society, and the only occupant of that office, his tenure of which being afterward made permanent. The Society determined to issue a Journal of a scientific character, designed "for the collection of the fast-vanishing remains of Folk-lore in America," and "for the study of the general subject, and the publication of the results of special students in this department." The first number of the Journal, for April–June, 1888, appeared under the general editorship of Mr Newell, whose intimate connection with this publication ceased only with his death.

From the issuing of the first number in 1889 to the close of the thirteenth volume in 1900, Mr Newell, was the editor of *The Journal of American Folk-Lore*, and continued his services as associate editor from that time until his death. Of the Memoirs (eight volumes, 1894-1904; the ninth is soon to appear) published by the Society, he was also the responsible editor. A glance through the volumes of the Journal reveals the enormous amount of editorial and other work accomplished by him. Besides contributing some thirty important and many minor articles, he conducted several departments, and furnished many scores of authoritative book reviews, to say nothing of innumerable lesser bibliographical notes. These book reviews abundantly demonstrate his wide reading and thorough grasp of the subject of comparative folk-lore, no less than his wonderful knowledge of those topics lying more especially in his own particular field. It is in some of these reviews that we find examples of his best work, both as to criticism and as to literary form; here he was often most genial. As an editor he was ever courteous and sympathetic, with an abiding sense of humor. When the late lamented Gatschet, in days before the Carnegie-Roosevelt-Matthews era, insisted on spelling "rhyme" *rime*, Mr Newell yielded to his desires, but appended to the article (vol. II, p. 53) the following note:

"*Rhyme, rime.* The latter spelling of this word, as etymologically the true form (see the etymological dictionaries), is preferred by our *collaborateur*, as by several modern writers. The case seems to be one in which liberty of choice may reasonably be demanded."

In an article of his own, appearing in the last number of the sixteenth volume of the Journal, a misprint had escaped attention till the final proof, and in correcting it he wrote:

"Of course. What a thing is the human mind! 'Tis not aphasia,— but heterology, or whatever the word is for meaning one thing and perceiving another. Pray correct to *Patagonians*."

The writer, whose association, unofficial and official, with Mr Newell in the conduct of the Journal covers almost the period of its existence, will always esteem it one of the most pleasurable and satisfactory labors of his life — something impossible to repeat or to duplicate. The stimulus of his sympathy will continue to the end.

When the Journal began, Mr Newell, who had been for some time much interested in "voodooism," contributed to the first number an article on "Myths of Voodoo Worship and Child Sacrifice in Hayti," in which he discussed exaggerated statements as to "Voodoo" practices

and pointed out the etymology of the term "voodoo" (and, with it, also "hoodoo"), from French *vaudois*, first "Waldensian," then "witch," by reason of the practices attributed to the Waldenses by their Catholic neighbors and enemies. To this subject he recurred several times (vol. II, pp. 41–48; IV, pp. 181–182). Other aspects of Negro folk-lore received his attention, and he expressed the opinion (vol. XII, pp. 294–295) that "the farther proceeds the collection of Negro superstition in America, the more clearly it appears that a great part of their beliefs and tales are borrowed from the whites." In the Memoirs of the Society are included H. Chatelain's *Folk-Tales of Angola* (1894) and Prof. C. L. Edwards' *Bahama Songs and Stories* (1895), showing the catholicity of his interest.

Another subject in which his original investigations bore fruit was "The English Folk-tale in America." His first note on this topic was published in the first volume of the Journal, while his most important treatment of it is to be found in the valuable comparative study of "Lady Featherflight," read before the International Folk-Lore Congress at London in 1891, and published in its Papers and Transactions (pp. 40–64). Beginning with a brief discussion of "Beauty and the Beast" (vol. II, pp. 213–218), he gave the Journal a series of valuable and often exhaustive comparative studies of folk-tales, songs, superstitions, etc. Such were "Game of the Child-stealing Witch" (vol. III), "The Carol of the Twelve Numbers" (vol. IV), "Conjuring Rats" (vol. V), "Cinderella" (vol. VII and XIX), "The Ignis Fatuus" (vol. XVII), "The Passover Song of the Kid" (vol. XVIII), etc. In these original and critical studies he gave expression to some very interesting, sometimes absolutely convincing, conclusions. "Cinderella," for example, he regarded as a comparatively modern *märchen*, of European origin. Again and again he demonstrated the literary sources of certain items of folk-lore and indicated how "the ideas and literary productions of ancient civilizations are continually blending themselves with folk-lore" — a Jewish Passover song turns out to be a translation of a French *randonnée;* American Negroes possess the relics of a European heroic saga, etc.

The collection of the traditions, etc., of the native races of America was greatly stimulated by Mr Newell, who in an article on "The Necessity of Collecting the Traditions of the Native Races," contributed to the first volume of the Journal, maintained that "to complete the record of the mythology of American Indians is to the full as important as to make researches in Greece, Assyria, or Egypt," while the need of collection is more imperative owing to the rapid disappearance of much of

the material. Time and again he laid the investigators of the mythology and folk-lore of the American Indians under obligation by emphasizing the importance of the lore of primitive races (vol, III, pp. 23–32, p. 160, etc.), insisting always that, as expressed in the earliest statements of the objects of the American Folk-Lore Society, its program should include "the entirety of the oral traditions of the Indian tribes of America." The phrasing of the original circular was, "Lore of the Indian tribes of North America (myths, tales, etc.)." His influence in promoting research in this field was very great. Three of the volumes of Memoirs published by the Society relate to the Indians (Navaho, Thompson River, Pawnee). In the second volume of the Journal appeared an article on "Current Superstitions," written in collaboration with Mrs Fanny D. Bergen, whose two volumes on *Current Superstitions* and *Animal and Plant Lore* were subsequently published as Memoirs. The subject of superstitions, weather-lore proverbs and phrases, dialect and colloquial words, etc., was touched upon by Mr Newell from time to time (vol. II, pp. 153, 203; vol. V, p. 60, etc.); he even suggested etymologies for "gas" (vol. II, p. 64) in the slang sense; for the Louisianian "calinda" (vol. IV, p. 70), etc.

The encouragement which he gave to the investigation of the interesting folk-lore of the people of French descent in North America resulted in the publication of Professor Fortier's *Louisiana Folk-Tales* as the second volume of the Memoirs of the Society (1895). A brief note in the seventh volume of the Journal (p. 60) evidences both his delight at the discovery of a quaint oath of the French Canadian *voyageurs* and his skill in finding its analogues in the wider field. As the pages of the Journal also show, he stimulated research into the folk-lore of the Germans in Canada, and especially promoted the study of the "Pennsylvania Germans," with their rich material of all kinds. At his suggestion the number of the Journal for April–June, 1904, was devoted to a reprint, with introduction by Carleton F. Brown, of J. G. Hohman's *The Long Hidden Friend*, for a century a prime authority of Pennsylvania witch-doctors and a valuable book of popular magic.

Nor did he neglect the folk-lore of Spanish America, as the contributions of Gatschet, and particularly of Bourke, demonstrate; while the forthcoming ninth volume of the Memoirs is to consist of M. R. Cole's *Los Pastores, a Mexican Miracle Play*, in which are made accessible for the first time the Spanish texts from Texas and New Mexico.

To the number of the Journal in press at the time of his death he contributed a valuable comparative "Note" on Philippine variants of Cinderella; and at the eighteenth annual meeting of the Society at New

York (December 27, 1906 to January 1, 1907) he treated the subject of "Philippine Märchen." Thus he showed his interest in the latest addition to the field of "American" folk-lore.

Although the best statements of Mr Newell's views on many more or less theoretical questions of comparative folk-lore are to be found in discussions, which, unfortunately, seldom found their way into print, reviews of books, etc., the rest of his writings contain several articles of theoretical criticism and exposition of the results of his own careful study and investigation. Some of these appeared outside the pages of the Journal.

Before the International Anthropological Congress, held at Chicago in 1893 in connection with the Columbian Exposition, Mr Newell read a paper on "Ritual Regarded as the Dramatization of Myth," in which he sustained the thesis that legend is the basis not only of ritual speech and song, but also of ritual costume and even gesture. Myth and ritual, indeed, are two correlated elements of worship equally ancient and equally important. In an article on the "Theories of Diffusion of Folk-tales" (vol. VII, pp. 7–18), after discussing the various theories on the subject he gives expression to his own view that "in almost all cases folk-thought and folk-practices are imposed by cultured races on the more barbarous, and very little passes from the savage to the civilized." The history of ideas, he held, is not parallel to that of speech. In 1902 he contributed to *The International Monthly* an article on "Fairy Lore and Primitive Religion," of which the chief conclusions are the fundamental identity of spirits of every sort — many are the survivals of ancient divine powers — fays, for example, correspond to the innumerable Roman genii; and the practical character of the ends of early religion. He showed how "fairy mythology, apparently light and fantastic, nevertheless represents the serious belief and worship of early religious life." The question of individual and collective characteristics in folk-lore he discussed in an article in the Journal for 1906, in which he argues that "the alleged collective or 'communal' character of folk-song, its simplicity and universality, are sufficiently explained by its oral medium, and by the relatively simple life of antiquity as compared with the more differentiated present."

The funeral of Mr Newell took place from the Unitarian Church in Wayland on January 27, and was attended by a number of his scientific colleagues and friends. On March 10 a memorial service was held in the First Parish (Unitarian) Church in Cambridge. The minister of the Church, Rev. S. M. Crothers, presided, and addresses on Mr Newell and his work were delivered by Colonel Thomas Wentworth Higginson for the Authors' Club of Boston; Dr Franz Boas of Columbia University for the

American Anthropological Association, and Professor C. H. Toy of Harvard University for the History of Religions Club. Letters were read from Reverend Edward Everett Hale, and from Professor F. W. Putnam who, being unable to be present on account of the state of his health, wrote on behalf of the American Folk-Lore Society, his communication being read by Dr R. B. Dixon, president of the Society. Dr Crothers closed the meeting with a few sympathetic words and the reading of one of Mr Newell's briefer poems. The meeting was a simple and effective tribute to the man whose lovable personality drew round it so many men of many minds.

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PROCEEDINGS OF THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON

Meeting of November 7, 1905

The 378th meeting was held at the Cosmos Club, November 7, 1905, the president, Dr George M. Kober, and 75 members and guests present. The election to active membership of Reverend Dr James B. Nies, Dr J. Wesley Bovée, and Dr James Dudley Morgan was announced.

Dr J. Walter Fewkes read a communication, illustrated with lantern views, on *The Mound Builders of Eastern Mexico.* Two types of earth mounds, both widely distributed in North America, present instructive problems for the comparative archeologist. One of these types, well represented in the Pueblo area of the United States, includes mounds that are apparently constructed of earth or stones, or of both, but are really formed by the accumulation of débris from fallen walls, the foundations of which still remain *in situ.* Mounds of the second type were constructed as foundations for buildings or superstructures, and their interiors are homogeneous throughout. In the United States the first type is almost wholly confined to the Southwest, but the second type is well represented in the lower Mississippi valley.

In the mountainous parts of Mexico the majority of the mounds of the second type are situated south of the ruins near Quemada in Zacatecas. As a rule those north of Quemada in Mexico belong to the first type. On the eastern slope of the mountains the second type has been traced as far north as southern Tamaulipas. Its northern extension is supposed to end near ruins in the neighborhood of Aldama. There is as yet no evidence that this type occurs in northern Tamaulipas or in Texas, but earth mounds of the same external form and apparently of the same mode of construction, indistinguishable from those found in eastern Mexico, reappear in the Mississippi valley.

The earth mounds of Vera Cruz are supposed to have been made by the ancient Totonac, those of Tamaulipas and northern Vera Cruz by the Huastec. The latter are linguistically allied to the Maya of Yucatan. The relation of the eastern Mexican mounds to those of the Mississippi valley is one of the enigmas of American archeology.

As a representative Totonac ruin Doctor Fewkes chose for study the mounds of Cempoalan, a historic city situated not far from the coast of

the Gulf of Mexico, near the city of Vera Cruz. Views were shown of the great pyramidal structures that once surrounded the plaza, the "Templo del Aire" dedicated to Quetzalcoatl, "Caritas," so-called from the clay heads in the panels of its walls, and other well-preserved mounds of this ancient Totonac metropolis. These views were accompanied with descriptions of the Cempoalan pyramids and of the remains of the superstructures upon them.

Lantern illustrations and descriptions of a cluster of pyramidal mounds at Texolo, near the Hispanized Indian pueblo of Xico, not far from Jalapa, also were given. The ruin Xico Viejo, or Old Xico, supposed to have been an Aztec garrison post, is believed to have been mentioned by Gomara and Bernal Diaz in their itinerary of the route of Cortés over the Perote mountain after leaving Jalapa. An idol in the form of a stone stela stands in the plaza of this ruin. When visited this idol had fruit offerings upon it.

Some of the more important types of Totonac and Huastec stone objects and pottery, as yokes, spatulate carved stones, idols, bowls, and vases, were likewise presented. Many of them are in the famous Dehesa collection in Jalapa.

In order to compare the mounds of Vera Cruz with those of the neighborhood of Tampico, views of ancient Huastec settlements at Altamira and north of the Panuco river were introduced. Earth mounds faced with stones were found at La Palma, north of the Champayan lagoon. These were identified as ruins of the towns destroyed by Cortés and his lieutenants in the beginning of the sixteenth century. In conclusion Doctor Fewkes described and pictured many characteristic Huastec stone implements and idols.

Meeting of November 21, 1905

The 379th meeting was held November 21, 1905, the president, Dr George M. Kober, in the chair, and 33 members present.

Dr A. HRDLICKA presented a communication on *Work of Blind Indians, with Demonstration.* The speaker announced that blindness is more freqent among many of the tribes, particularly among some of the Pueblos, than among the whites in this country. It is met with among all classes. Its predisposing causes in the Southwest are mainly various irritations, particularly those due to sand-storms, less often to smoke. Smallpox, infections, and injuries are responsible for a certain proportion of the cases. The principal cause of blindness, however, is the general ignorance among the Indians of even the simplest rules of hygiene, and

of the dangerous or communicable nature of various eye affections. This should yield gradually to proper instruction by the teachers, matrons, and physicians.

The blind Indian, especially if young, excites compassion. He is not, however, abandoned by his relatives, and in time becomes useful in helping about the house, and even in other work. Occasionally the difficulties due to lack of sight are overcome by the patient in a remarkable manner. At San Carlos, Arizona, for instance, lives a totally blind Apache who built his own dwelling, walks alone, shoes and rides his horse, and does other things which ordinarily require sight. He has been selected, by reason of his intelligence, as one of the judges of the tribe. On another part of the San Carlos reservation the speaker saw a totally blind old woman making a decorated basket (this and another specimen, also decorated, which she made, are now in the National Museum collection). The decoration is in catsclaw fiber and consists of a band of simple geometrical figures. This woman not only displayed dexterity and good touch, but also the innate love of her people for the beautiful, for both of the baskets were made for household use only, and there was no practical need for decoration.

Colonel PAUL EDMOND BECKWITH presented a paper on *Coins and Coinage*, stating that numismatics, as a branch of archeology, gives valuable knowledge of the details of religion, the political state of ancient countries, and the geography and history of peoples of whom tradition has handed down but the names. Colonel Beckwith described the manufacture of classic coins and medals, and cited their classification into antononias, coins of colonial and of imperial metropolitan dynastic cities, and family coins. The various important changes in the coinage of the world from the Lydian or first issue in the sixth century B. C. to the present were briefly touched upon. An important feature of the paper was the history of Chinese and Japanese coinage from the remotest time, when shells were the medium of exchange, to the issues of gold, silver, and finally copper "cash" of the present day.

Mr GEORGE C. MAYNARD read a paper on *The Development of the Talking Machine and its Utilization in Anthropology*. Mr Maynard referred to the suggestion of Charles Bourseil, in 1854, that a machine for transmitting speech might be possible; to the work of Philip Reis of Frankfort, Germany, who in 1859 made a circuit-breaking machine used for transmitting sounds but not articulate speech; the phonautograph of Leon Scott, of Paris, in 1857, by which sound records were traced with a delicate stylus on a carbon-coated cylinder and used for studying

the sound curves; and the later inventions of Edison and other Americans. The subject was illustrated with a number of typical historical instruments, including the early forms of Alexander Graham Bell's telephones introduced in 1876; Edison's first phonograph, in which the record of speech was embossed on a sheet of tinfoil, and his improved talking machines in which a stylus was made either to trace a rough groove in a waxen cylinder or to carve out a clean groove in the same material; also the gramophone invented by Emile Berliner, which provided means for tracing the sound record in horizontal lines in a thin film of wax spread on a zinc plate. The improvements in the course of the great development of telephones and talking machines and of the various scientific purposes to which they are applied were briefly discussed.

The paper by Dr P. E. GODDARD, *Mechanical Aids to the Study of and Recording of Language*, read at this meeting, has been published in the *American Anthropologist* (vol. 7, p. 613, October–December, 1905); likewise the paper on *The Naming of Specimens in American Archeology*, by Dr CHARLES PEABODY and Mr W. K. MOOREHEAD (ibid., p. 630).

Meeting of November 29, 1905

A joint meeting of the Anthropological Society and the Medical Society was held November 29, 1905. The paper of the evening, on *Diseases of the Indians, More Especially of Southwestern United States and Northern Mexico*, was read by Dr A. HRDLICKA. This paper, with the discussion, was published in *Washington Medical Annals* (vol. IV, 1906, p. 372–394), and is an abstract of a forthcoming bulletin of the Bureau of American Ethnology.

Meeting of December 5, 1905

The 380th meeting was held December 5, 1905, the president, Dr George M. Kober, in the chair, and 28 members present. The secretary announced the election of Dr J. D. Murray and Mr Henry W. Henshaw to active membership.

Dr SHELDON JACKSON addressed the Society on *The Introduction of Reindeer among the Natives of Alaska*. He gave a brief account of the Eskimo, and described also the Indian tribes comprising the Athapascans of the interior, as well as the Tlingit, Haida, Tsimshian, and others, pointing out on a large wall map the location of each tribe. Dr Jackson said that the whale industry was prosecuted with such great vigor by the whites that the coast natives were robbed of their principal living. These hunters destroyed also walrus and seal. The interior tribes were brought

to distress by the destruction of the game, following the introduction of modern guns. So extreme was their destitution that, as a means of relieving them, reindeer were introduced from Siberia, where the Koriak have from time immemorial possessed numerous herds. The introduction of reindeer is now a matter of history. The 1,200 brought have increased to about 15,000. These are located at a number of reindeer stations, and small herds are lent to reliable natives and to missions, who are entitled to the increase. Dr Jackson said that this method has proved of the greatest benefit to the Eskimo, saving him, in the first place, from extinction, and giving him steady habits and an opportunity to earn money. Reindeer have proven of the greatest value also in transportation, since this animal does not require to be fed as do dogs. It is estimated that there is pasturage in Alaska for 9,000,000 head of reindeer, and it is likely also that they will become of marked economic importance, since the four-year-old animal furnishes excellent and marketable meat, while the skins are valuable for leather.

Meeting of December 16, 1905

The 381st meeting was held December 16, 1905, the president, Dr George M. Kober, in the chair, and 70 members present. Dr WALTER HOUGH gave an account of his *Recent Archeological Explorations on the San Francisco River, Arizona and New Mexico.* The paper was illustrated with lantern slides.

This second season of the Museum-Gates expedition was devoted to the examination of the archeology of San Francisco river and its branches from Clifton, Arizona, to the divide between the Gila and Little Colorado systems, about 100 miles north of that town. Views of many pueblo, cliff, and cavate ruins examined in this region were shown, and an especially interesting ceremonial cave of great extent, situated on Blue river, Arizona, was described in detail. From this cave a quantity of painted bows, arrows, tablets, baskets, pottery, ornamented cloth, stone and shell beads of various colors, etc., was secured. Another cave, near Joseph, New Mexico, yielded many specimens, including three desiccated human bodies. It was stated that the collections of the expedition are of especial value, since much of the material appears to belong to a people differing from those who inhabited other sections of these territories.

Meeting of January 2, 1906

The 382d meeting was held January 2, 1906, the president, Dr George M. Kober, in the chair, and 92 members and visitors present.

Mr JOHN HITZ presented an illustrated address entitled, *Helen Keller: Her Life Associates and Achievements.* Mr Hitz, who has had personal opportunity of observing the physical and mental growth of Helen Keller, gave a most interesting account of her early education and the method of her enlightenment. The paper, somewhat condensed, is published in the *American Anthropologist* (vol. VIII, no. 2, April-June, 1906).

Meeting of January 16, 1906

The 383d meeting was held January 16, 1906, the president, Dr George M. Kober, presiding, and 26 members and guests present.

The first paper of the evening was by Mr F. V. COVILLE, on *A Native Moxa (Cautery) among the Klamath Indians.* These Indians used a cautery of a special kind which was made by chewing and reducing to fine pulp the bark of the "buck brush" (*Kunzia tridentata*). This pulp is pressed into small cones, one of which is placed on the part affected, lighted, and allowed to burn down to the skin, scarifying it. Mr Coville said that while moxa was in general use among the people of the eastern hemisphere, its employment among the American Indians was very rare.

Dr D. S. LAMB presented a paper on *Anatomical Vestiges in Human Organisms.* Dr Lamb said that, as man is developed on the same general plan as other animals, especially other vertebrates, so at various stages in his development he shows conditions that may develop further, or remain stationary, or altogether disappear. If any of these conditions, which develop further in the lower animals, remain stationary in the human, we say that for the human it is a *rudiment*, remnant, or vestige. Again, when we find some stage reached by the human subject—a stage that as a rule disappears in his further development—we say that this disappearance is normal; but if instead of disappearing, this stage persists exceptionally in the human, and at the same time is constant for some lower animal, we say that this stage is, for the human, a *reversion*, that in this instance the human reverts to the normal condition in the lower animal. There are many vestiges and many reversions steadily coming under our observation—too many to name. Some are innocuous, but someare sources of danger, especially the vermiform appendix in man, which is generally believed to be a vestige of the larger cæcum of herbivorous animals. There are many *sexual* vestiges, vestiges in the one sex of stages that nature and function in the other; this is true of all animals.

Meeting of January 30, 1906

The 384th meeting was held January 30, 1906, the president, Dr George M. Kober, in the chair, and 31 members in attendance. The president announced the death of Dr Swan M. Burnett, an active member of the Society for many years.

Dr I. M. CASANOWICZ presented a paper on *The Babylonian Code of Laws of Hammurabi and the Laws of Moses.* The monument on which the code was engraved, a block of black diorite nearly eight feet high, was discovered by the French Government expedition under the direction of M. J. de Morgan in the winter of 1901–02 on the acropolis of Susa (the biblical Shuthan). Hammurabi, the compiler and promulgator of the code, was known from other Babylonian inscriptions to have reigned in Babylonia in the twenty-third century B. C. The Babylonian code thus antedates by about a thousand years the Mosaic laws as contained in the Pentateuch, the oldest collection of laws hitherto known. A selection from the 247th enactment of Hammurabi's code with parallels in the Pentateuch was given with the special view of presenting a picture of the social conditions and ethical standards which both law-systems reflect. Dr Casanowicz grouped the laws under the five headings: (1) The family; (2) land and agriculture; (3) trade and commerce; (4) slaves and laborers; (5) protection of the person. The Babylonian code discloses a highly cultured state of society, presupposing many centuries of human progress lying back of it. It reveals a high condition of social and economic development, with a firmly established government and a regular judiciary, and with a fully developed agriculture and numerous trades and occupations, and a diversified commercial life. There are numerous and striking resemblances in substance and form between the laws of Babylonia and those of the Pentateuch, but also many divergencies between these legislative systems, due to the widely different political organization and social conditions of the Babylonians and the Israelites.

The second paper, entitled *Existing Shadows of Primitive Conditions*, was by Mr C. H. ROBINSON, who pointed out the many cases of survival of customs which have become part of our daily life. Numerous examples of these customs which have become actuating motives were recited. The paper was received with marked interest and provoked considerable discussion.

Meeting of February 13, 1906

The 385th meeting was held February 13, 1906, with the president, Dr George M. Kober, in the chair, and 50 members present.

Mr E. L. HEWETT presented an illustrated paper on *Recent Archeological Investigations on the Pajarito Plateau*, in which he described the physiography and geology of the region and the climatic features, and offered the opinion that the climate has changed, being drier now than in former centuries. He dealt with the question of the age of the ruins in this region and said that while the evidence is that man has inhabited the region a very long time, no reliance should be placed in reported discoveries of sub-lava human remains. Most of the specimens supposed to show corn inclosed in lava were found, on chemical analysis, to be simply fused adobe. There are thirty-two large ruins in the Pajarito plateau — cliff-dwellings, pueblos, and superficial remains. The plateau, which lies about 25 miles northwest of Santa Fé, New Mexico, is characterized by very deep erosion in soft volcanic tufa. In this tufa are innumerable excavated dwellings, the plans of many of which were shown. Restorations of the ancient pueblos of Otowi, Tchrega, and Sankiwi were thrown on the screen. Mr Hewett described his excavations in the burial mounds in several of these ruins, which revealed a large number of skeletons accompanied with pottery and traces of basketry and matting. It was observed that war implements were very scarce. In conclusion Mr Hewett exhibited a large number of views showing symbolism of ancient and modern pottery, and discussed the glaze which appears on some of the ware of the Rio Grande.

Dr A. HRDLICKA, to whom the osteological remains from this expedition were submitted, said that while the skulls generally from the ancient ruins of the Southwest show a variety of head forms (10 percent dolichocephalic, 30 percent of an intermediary form, and 60 percent brachycephalic), the remains obtained by Mr Hewett are purely dolichocephalic and may be related to southern types.

Meeting of February 27, 1906

At the 386th meeting, held under the auspices of the Washington Academy of Sciences in Hubbard Memorial Hall on Tuesday, February 27, 1906, Dr GEORGE M. KOBER, president of the Anthropological Society, delivered an illustrated address on *The Health of the City of Washington*.

Dr Kober stated that the weather conditions prevailing in Washington are not accountable for the large mortality, but the cause must be looked for, first, in the natural surroundings, as the Potomac marshes and the polluted river, features which are remediable and are in course of elimina-

tion; second, soil and local water pollution, and insanitary housing, also rapidly being remedied, with a consequent lowering of the death-rate; and, third, racial conditions. Under the last head Dr Kober showed by statistics that the colored population is a potent factor in maintaining the abnormal death-rate of the District of Columbia. The causes underlying this fact, Dr Kober said, were doubtless due primarily to the transference of the African from his native and accustomed environment, giving increased susceptibility to tuberculosis and other diseases; to radical changes in living both as regards habitation and food; and to racial degeneracy caused by miscegenation. The poverty and unprogressiveness of the negro, forcing him into crowded, disease-breeding slums, Dr Kober regards as a nearer and more powerful cause of the present conditions. He strongly urged the needs of the District of Columbia and pointed out improvements necessary to render the capital a model city. The address was a striking instance of the value of practical anthropology in vital questions.

Meeting of March 13, 1906

The 387th meeting was held at the Cosmos Club, March 13, 1906, president Kober in the chair, and 30 members present.

Professor HENRY MONTGOMERY, of Toronto University, read a paper entitled *The Remains of Prehistoric Man in North Dakota*. This paper appeared in the last issue of the *American Anthropologist*.

The second paper of the evening, *Critical Remarks on Social Organization*, was presented by Dr JOHN R. SWANTON. Dr Swanton's remarks summarized his paper appearing in this journal (vol. 7, p. 666, Oct.–Dec., 1905) containing a review of the theories now current as to primitive social organization and a résumé of the results of his own investigations on that subject. He presented a map showing the relative distribution of the Indian clan and gentile systems, with male and with female descent, in the region north of Mexico, as well as in the areas in which both are lacking. Dr Swanton concluded that this latter area represents the earlier social condition from which the clan and gentile systems have been developed.

Meeting of March 27, 1906

The 388th meeting was held March 27, 1906, the president, Dr George M. Kober, in the chair, and 100 members and visitors present.

Dr ALBERT ERNEST JENKS, formerly director of the Ethnological Survey for the Philippine Islands, presented an illustrated paper on *The People of the Philippines*. Dr Jenks said that by position the islands

belong to Oceania and that in Middle Tertiary time they were probably part of the great continent. While there are no data as to the earliest inhabitants of the Philippines, some of the primitive tribes, such as the Negrito and the Mincopie, present the lowest state of physical development and the lowest stage of culture among Oceanic peoples. Dr Jenks discussed the environmental conditions of the islands with regard to adaptation to the well-being of the primitive peoples, and described the salient features of the different areas inhabited by the native tribes. The Negrito he regards as the relic of the earliest migration. Later theer were various incursions of Oceanic Mongols, of which there is tradition and historical data only as to the Malays. He described with some detail the Igorot, Ibilaos, Bagobo (characterized by him as Dyaks), Mandaya, Subano, Mangayan, and Moro — all uncivilized tribes. Some account was given of the Christian tribes also, among whom seven dialects are spoken; and in this connection Dr Jenks said that a mixture of Chinese and Filipino produces the most capable class to be found in the islands. The speaker presented a very unfavorable picture of the Moros, and stated that in his opinion the present generation was incapable of becoming imbued with western civilization.

A vote of thanks was tendered to Dr Jenks by the Society for his admirable and instructive paper.

Mr W. E. SAFFORD read a paper entitled *The Igorot of Luzon*. Mr Safford, who has studied the linguistics of the tribes of Oceania, presented a very interesting comparison of the Chamorro language of Guam with the Igorot of the Philippines. He thinks that the etymology of many words spoken by the Igorot denotes their relationship with the natives of Formosa, Guam, Hawaii, Samoa, and the Easter islands, thus forming an important clue to the origin of one of the uncivilized tribes. Mr Safford regretted that the researches thus far conducted into the native language of the Negritos of the Philippines had been so incomplete as to render uncertain the attempt to trace the relationship existing between this people and the Negritos of the Andaman islands.

Meeting of April 10, 1906

The 389th meeting was held April 10, 1906, with the president, Dr George M. Kober, in the chair, and a large attendance.

The History of Anthropology in the District of Columbia was the title of a paper by Professor OTIS T. MASON, which in his absence was read by the secretary. Professor Mason stated in this paper that the term Anthropology would be taken to mean the scientific study of man and of his works.

The District of Columbia, said Professor Mason, was from long ago the nursery of our science, constituting a somewhat special environment, cut off by the Great Falls of the Potomac, the mountains on the west, and the waterways to the north and south, and here are abundant relics of aboriginal occupancy. In the colonization of the District, two other types of mankind — negro, pure and mixed, and the subspecies of several varieties and different faiths of the white race — were mingled. Since its establishment as the seat of government, it has been a laboratory of culture history, a training ground for municipal and national government, and an experiment station for testing new ideas. "Washington at this moment is a living museum of anthropology." Professor Mason confined his paper to the consideration of what has actually been done in the District of Columbia in the systematic study of anthropology and necessarily his treatment was mainly biographical — the study of men and institutions in the states that made progress in this direction before the city was founded. He divided into decades the 100 years or more covered by the paper, these decades having indefinite lines of partition and presenting in each period the inception of organization and efforts in anthropology.

In closing his remarks, which were followed with marked interest, Professor Mason said that it is for the Society to continue to keep abreast of new and widening opportunities to give to the word Anthropology its broadest possible interpretation — one that will put the labor of each at the service of all.

Dr MAX WEST read a paper on *The Interrelations of the Sciences*, with special reference to the classification of social science. He conceded that instances of the indebtedness of natural science to the social sciences are probably less frequent than cases of indebtedness in the opposite direction, but cited the suggestion of the idea of natural selection to Darwin by Malthus' work on Population as of sufficient importance to counterbalance many of the analogies and suggestions which the social sciences have borrowed from natural science. He declared it natural and right that each science should use the results of the other sciences. The sciences are not a hierarchy, but rather a network, each one being connected with all the others, receiving their results and using them in the study of its particular problems. The mutual relations of the concrete and the abstract sciences were graphically represented by a subdivided rectangle, adopted from Giddings' *Principles of Sociology*, and the possibility of representing the various applications of science by means of a third dimension was suggested. Conceiving sciences as a means for solving particular classes of problems, and not mutually exclusive in

respect to their data or subject-matter, the speaker defended the multiplication of the sciences and the names of sciences as an inevitable result of increasing specialization. The relations of sociology and anthropology were discussed and a nomenclature was proposed for the subdivision of economic science.

Meeting of April 24, 1906

The 390th meeting was held April 24, 1906. The secretary of the council announced the election of the Reverend J. E. Gilbert to active membership.

Dr C. HART MERRIAM addressed the Society on *Fragments of Californian Ethnology: A Mortuary Ceremony, and Other Matters.* Dr Merriam briefly sketched the myths and beliefs and the mortuary customs of the Indians in different parts of California, and related an origin myth of the Miwok Indians north of San Francisco. The chief actor in this myth is the Coyote man who lived anterior to the first people. He came from across the Pacific to the northwest. The myth embraces the genesis of land, as well as that of people, the latter of whom the Coyote created by means of feathers blown from Sonoma peak. A similar myth recounts the creation of men from the feathers of ducks killed by a being called "wek wek."

Dr Merriam gave in detail the ceremony of the Indians of south central California performed to commemorate the dead. This ceremony consisted of a feast, the preparation of an immense pole decorated with baskets, the fastening of the baskets on the pole, and various songs sung at intervals of eight days. Several of these songs were sung for the society by Mrs Merriam. During the ceremony offerings are stuffed into a sealskin bag and burnt, and the chief's son dances valiantly on the ashes. In conclusion Dr Merriam recounted numerous beliefs in ghosts, dwarfs, giants, sorcerers, and natural phenomena.

Meeting of May 8, 1906

The 391st meeting was held May 8, 1906, the president, Dr George M. Kober, in the chair, and 25 members present.

Mr A. R. SPOFFORD presented a paper on *Human Illusions*, treating in an interesting way the diverse phenomena grouped under this title. Mr Spofford divided these illusions into those of individual superiority, of prejudice and heredity, of optimism and pessimism, of opinion and witchcraft, destruction of the world, the crusades, flagellants, Christian Science and Dowie, miracles, hysteria, superstitions, financial and specu-

lative, "hen fever," and socialistic communities, of which he gave illustrations. Among the familiar illusions which Mr Spofford mentioned are those of the Alexandrian library, William Tell, Pocahontas, mermaids, thirteen, Friday, forgeries of all kinds, and that Bacon wrote Shakespeare, etc. Mr Spofford said in conclusion that while the illusion has its value, the study gives food for reflection and a hopeful augury for future emancipation from its thralls.

Mr J. N. B. HEWITT read a paper entitled *The Family in Social Organization.*

Meeting of May 22, 1906

The 392d meeting was held May 22, 1906, the president, Dr George M. Kober, in the chair, and 24 members present. Obituary notices of members deceased during the year were read as follows: Dr Washington Matthews, by Mr James Mooney; Dr Swan M. Burnett, by Dr D. S. Lamb; Col. Weston Flint, by Mr J. D. McGuire; Mrs Hannah L. Bartlett, by Mrs Marianna P. Seaman; Mr S. H. Kauffmann, by Mr W. H. Holmes; Mr W. H. Pulsifer, by Dr Walter Hough.

The Society elected officers as follows: *President*, J. D. McGuire; *Vice presidents* (A, Somatology), A. Hrdlicka; (B, Psychology), J. Walter Fewkes; (C, Esthetology), W. H. Holmes; (D, Technology), Walter Hough; (E, Sociology), James Mooney; (F, Philology), J. N. B. Hewitt; (G, Sophiology), Miss Alice C. Fletcher; *General Secretary*, Walter Hough; *Secretary to the Board of Managers*, John R. Swanton; *Treasurer*, George C. Maynard; *Curator*, Marianna P. Seaman; *Councillors*, F. W. Hodge, J. R. Swanton, J. Walter Fewkes, I. M. Casanowicz, Paul Edmond Beckwith, J. B. Nichols, J. N. B. Hewitt, James Mooney, W. E. Safford, and Sarah S. James.

WALTER HOUGH,
General Secretary.

BOOK REVIEWS

Forschungen über gleichgeschlechtliche Liebe. Von F. KARSCH-HAACK. I. Band. *Das gleichgeschlechtliche Leben der Ostasiaten: Chinesen Japaner Koreer.* München: Seitz & Schauer, 1906. 8°, ix, 134 pp.

This is a most scholarly production by an assiduous worker, a deep thinker, and a genial philanthropist. In the *Jahrbuch für sexuelle Zwischenstufen* (vol. III, 1901, pp. 72–201) the author, who is a Privatdocent in the University of Berlin, discussed the occurrence of pederasty and tribady among primitive tribes, pointing out the existence of homosexual individuals among the Negroes, Malayans, American Indians, and Arctic peoples. In this new treatise the Chinese, Japanese, and Koreans are dealt with from the same point of view; in a second volume he proposes to treat of the Hamites, Semites, and the culture nations of America, while the Aryans will occupy the third and fourth volumes.

The leading thought of these investigations is, as stated in the preface (p. ix), that the above-named phenomena as effects of sexual impulse are not "vices," but manifestations always and everywhere appearing which are deserving neither of contempt nor social ostracism or brutal persecution by law, and that accordingly among single races and peoples they do not differ essentially or in principle, but in the characteristic forms of their occurrences there are variations corresponding to the ethnic traits of the peoples. Students of East-Asiatic cultures will feel greatly indebted to the author for the present volume, which represents a new and most interesting contribution to our knowledge of the culture of the Chinese and Japanese, with much new light on their innermost thoughts. It is undoubtedly a valuable character study of these peoples. The sources available for such a study are utilized with remarkable completeness, with conscientiousness and sound critical acumen. With regard to Chinese historical data which are quoted from sources that are now antiquated, and the spelling of proper names, the author would have done well to consult a sinologue; it is impossible to determine, for example, what person the emperor "Qua-Tschesi" (p. 11) is.

The reviewer, who essays an appreciation of this book merely in the attitude of a student of culture, openly admits that its subject proper, in its physiological and medical aspects, is entirely foreign to him; with that reserve becoming his ignorance of the matter, he ventures to say that in

the chapter on China a clear distinction seems to him not to have always been drawn between really homosexual persons and occasional homosexual actions of otherwise normal individuals, such as was doubtless the case, for example, of the Emperor K'ien-lung, for one can by no means stamp him as a homosexual, as it is known from history that he left five sons.

From his consideration of homosexual life in China, which is organized in all forms, developed in all degrees, and spread over all classes of society, the author formulates the conclusion that pederasty cannot palpably weaken the vitality of an otherwise healthy nation nor check the progressive increase of the population — that it cannot be the expression of the decadence of a people. The vital force, the power of resistance, and tenacity of Chinese culture, and the extent of the population would speak eloquently against any assumption to the contrary. What, from our prejudiced and narrow point of view, we call prostitution, in China and Japan is a fundamentally different institution, and a juster understanding of it is attempted by Karsch (p. 69).

The history of the sexual relations of the Japanese is the more interesting portion of the book, as in the treatment of this many more sources are available; indeed, the Japanese themselves have revealed to us so many features of their sexual life. The author believes he is able to prove, by the testimony of history, law, literature, and art, that in Japan there was a period of natural, naïve, and unscrupulous practice and cultivation of mutual men-love which has been artificially suppressed only since the latter part of the nineteenth century under the influence of Occidental ideas. No law ever stood in the way of pederasty. In the famous codification of the Hundred Laws of Iyeyasu (seventeenth century) by the first Shōgun of the Tokugawa family (doubtless the greatest personality whom Japan has ever produced) the intercourse of men and women is set forth as the fundamental law of human society, and marriage is recommended to all who have transgressed the sixteenth year of age. This common sense in natural things, however, did not shield the great legislator from the sober and objective judgment of others who deviated from the norm established by him. Article 86 of his code runs: "Male and female prostitutes, dancing-girls and persons roving about at night are unavoidable in towns and flourishing places of the country. Although the habits of men are often impaired by this, yet greater vileness would come forth if severe prohibitions were issued. But games at dice, intoxication, and sexual debauchery must be strictly forbidden." From the tenor of this it is unambiguously evident (according to Karsch) that the legislator regarded intercourse with boys and sexual dissolution as entirely

distinct things, and wanted them viewed in a different light. Japanese fiction is replete in descriptions of homosexual relations, the most prominent work being the "Great Mirror of Man-Affection," by the novelist Ibara Saikaku (1687), which is said to be an unvarnished realistic production not devoid of deeper sentiments nor of poetic beauty, and in all events a mine for the culture study of the Japanese people. About 1830 there appeared a catalogue enumerating no fewer than 177 Japanese works on pederastic subjects (p. 118). I fully concur with the author in his judgment on that branch of Japanese painting branded as "obscene" by the ordinary philistine spirit (p. 106), on that art of the nude which is certainly nothing but an outlet for the overflowing joy of life and sound sensuality unfettered by disguise and hypocrisy.

The Samurai, the military nobility, were in the habit of keeping fine young boys or youths in addition to their wives. Now, it is a curious fact that Satsuma was anciently and still is the center of pederasty, and it is also true that the bravest and most warlike people come from this province and clan of Satsuma. Lovers of boys are said there to be manlier than lovers of women. Until 1868 there was in Satsuma a law forbidding, under penalty of death, young men under 30 years of age to touch a woman. This law, remarks Karsch, was due to the fact that the population of Satsuma forms an exceedingly warlike tribe, ten to twenty thousand men of which were permanently at war and must have been concerned about the fidelity of their wives at home, had not the importunity of the youthful male progeny thus been checked. This can hardly be the true reason, but is merely the subsequent reflection of the Japanese on the subject. The actual Samurai idea which endeavored to deter young men from seeking women under this formidable threat was rather to drive them intentionally to homosexual intercourse. On this point and these conditions in general on the island of Kiushu the present writer has direct information from Japanese who lived there, and he may thus, for the rest, confirm the report of the author. Eye-witnesses assert that pederasty is still widely prevalent in the army and navy, being an inheritance from the Samurai; and it is said to have contributed not a little to the successes in the war against Russia. Though this may seem to be asserting too much, it cannot be denied that the military spirit of Japan was an essential factor in the cultivation of specific forms of manly relations; certainly it was not the cause of them, which remains as mysterious to Japan as to all other countries.

Considering the investigations of Karsch, there can be no doubt that homosexuality is an ethnological problem worthy the attention and re-

flection of the student of anthropology, though it is from the anthropological point of view that it is difficult for the reviewer to subscribe to all the opinions and judgments of the author. First of all, one is not inclined to believe that he has succeeded in entirely proving that these phenomena were ever regarded by the Japanese as perfectly natural up to the period of the restoration. This is such a far-reaching statement, of such paramount anthropological and psychological importance, and it would represent such an extraordinary case, that it deserves some discussion. Strangely enough, Karsch himself furnishes the material from which just the reverse of his thesis may be deduced. He thinks (p. 77) that the first allusion to pederasty in Japanese literature is found in the *Nihongi* (completed A.D. 720), in the annals of the empress Jingō, under the designation "atsunahi no tsumi," which he translates by "Vergehen der Männerliebe," referring to Hepburn's *Japanese-English Dictionary* as giving the meanings "crime, trespass," etc., for *tsumi*, but unfortunately, as he remarks, no information regarding *atsunahi*. But on what authority his own translation rests, the author does not state, although he quotes the whole passage in which this expression occurs from Aston's excellent and well-known version of the *Nihongi*, in which the correct interpretation is given. To make the whole case intelligible to the reader, and by reason of the importance of this alleged first historical reference to pederasty in Japan, we quote literally this interesting story from Aston's *Nihongi* (1, 238):

"Prince Oshikuma, again withdrawing his troops, retreated as far as Uji, where he encamped. The Empress proceeded southwards to the land of Kiï, and met the Prince Imperial at Hitaka. Having consulted with her ministers, she at length desired to attack Prince Oshikuma, and removed to the Palace of Shinu. It so happened that at this time the day was dark like night. Many days passed in this manner, and the men of that time said :— 'This is the Eternal Night.' The Empress inquired of Toyomimi, the ancestor of the Atahe of Ki, saying : 'Wherefore is this omen?' Then there was an old man who said : 'I have heard by tradition that this kind of omen is called Atsunahi no tsumi [Aston's note : "The calamity of there being no sun"].' She inquired : 'What does it mean?' He answered and said :— 'The priests (hafuri) of the two shrines have been buried together.' Therefore she made strict investigation in the village. There was a man who said :— 'The priest of Shinu and the priest of Amano were good friends. The priest of Shinu fell ill, and died. The priest of Amano wept and wailed, saying :— 'We have been friends together since our birth. Why in our death should there not be the same grave for both?' So he lay down beside the corpse and died of himself, so that they were buried together. This is perhaps the

reason.' So they opened the tomb, and on examination found that it was true. Therefore they again changed their coffins and interred them separately, upon which the sunlight shone forth, and there was a difference between day and night."

Atsunahi, or *atsunai*, is an archaic Japanese term, *atsu* meaning 'hot' and poetically used for 'sun' in compounds only, *nai* being the negative copula ('not to be'). Aston's explanation, "the calamity of there being no sun," or plainly a solar eclipse, is quite appropriate, while that of Karsch is arbitrary. But, assuming the latter to be correct, he has placed himself in the position of sawing off the very branch of the tree on which he sits, for if in this tradition intercourse between men be considered a crime—a crime of such an extent as to cause the sun to darken—it shatters his theory of an original natural concept of homosexual acts in Japan and would prove that in ancient Japan such acts were condemned. I should even go so far as to say that an unbiased mind could not find in this tradition a hint at those relations which our author infers from it. The plain words of the text do not bear out his interpretation. All that is said is that the two priests had been good friends from childhood, and it is only in their burial in a common grave that the abnormity of the case comes to cause its connection with a contemporaneous eclipse of the sun. Surely if Karsch's conception of a sexual intercourse and his reading into the text "Vergehen der Männerliebe" were correct, the whole story would be inconsistent. Why, if there is here the question of the "crime of man love," is not the sun made to disappear during the lifetime of the men, as would be most logical, instead of so doing only after their death? It is quite evident that it is only the unusual entombment of the two men that forms the keynote of the tradition. In this case it is not conducive to the evidence of homosexuality in ancient Japan.

Yet again (p. 97) we are told that in the *Norito*, the ancient rituals of Shintō, homosexual intercourse is not mentioned as a crime or sin, although sodomy is expressly named, which seems most noteworthy to our author, who thinks it would be inconsiderate to infer from this that pederasty had then been unknown. The passage to which he alludes may now be conveniently read in Aston's recent book on Shintō (London, 1905, p. 300). There is no evidence to show that ancient Shintō, either in an official or an unofficial form, ever sanctioned or tolerated pederasty, and if it did not condemn it, nothing can be followed from this regarding the existence or non-existence of such a custom. Shintō had very little, if any, concern with sexual relations; nor did it pronounce a verdict on

adultery (see Aston, p. 91), although this does not prove that it was in silent sympathy with it.

As this is all the evidence gathered by Karsch from the ancient Japanese sources, it cannot be said that what he seeks to prove is valid for this early period; and I am inclined to think that it did not then exist, at least not so manifestly as to attract public attention. And here an *argumentum ex silentio* seems to be somewhat conclusive, as all sexual relations are spoken of otherwise with unveiled naïveté and play an important part in the *Kōjiki*, the most ancient records of Japan. Now, if Karsch will make one believe that pederasty is inborn, so to speak, and hence natural to the Japanese, why does it not manifest itself in some form in the most natural productions of the *Kōjiki*? I am far from disbelieving that at a certain period and among certain classes of people it was practised as a thing seemingly and perhaps effectively natural to them: all that we hear and read about it in regard to the class of Samurai makes indeed the striking, not to say appalling, impression of naturalness and ingenuity. This state of naturalness however is apparently a secondary development, and not by any means the original idea, as emphasized by our author; it is a subsequent thought gradually bred and traditionally taught and handed down by the Samurai, and, we may admit, also by the celibate Buddhist priests. Even from the law of Iyeyasu it follows that the legislator only tolerated the practice, not that he approved of it. It is not too much to say that there is hardly a country under the sun that follows such sound principles and enjoys such wholesome conditions in matters of sexual intercourse as Japan, from which the hypocritical white world could learn many a lesson looking to the regeneration of its rusty morals, and that it is just this art of conforming to matter-of-fact living that the unique genius and exceptional greatness of Japan is due.

We do not deny any facts conscientiously recorded by Karsch concerning homosexual life; we fully believe in them, but we desire to accentuate that which he utterly neglects to state, that also in Japan they form the exception to the rule, and, offset by normal sexual conditions, they lose much of the magnification to which they appear to be subjected when viewed individually, and when severed from a universal consideration of the ruling ties of love.

It further seems to me that we are not justified in saying, with Karsch, that the sudden reaction and legal measures taken by the Japanese government against pederasty in recent times are due solely to the influence of Western methods. It is true that these clauses of the Japanese penal

code breathe the same spirit as corresponding ones in our criminal law and follow almost the same tenor; but it would mean to dispossess the Japanese lawyers of the freedom of the psychological motive by imputing to them the "forcible suppression of native genius," as Karsch puts it, through the imposing of a merely foreign law upon their people. There are many sections in our penal code that did not find an echo in that of the Japanese, owing to the entire lack of an actual basis for them in their environment. But the adoption of the clause against "unnatural offenses" sufficiently shows that the modern legislators of Japan were guided, and could not but have been guided, by a psychological motive in the reception of this law, which is to say that they were *not* led by the idea of that naïve and natural feeling toward this matter which our author tends to insinuate was the case with the mass of the Japanese. And this is further strong ground for our view that this natural concept of homosexuality was not general, but was restricted to certain classes to whom it was secondarily instilled by tradition and education.

Here we must touch upon another weak side of the book. In his laudable attempt to do justice to a widely misunderstood question, Karsch looks disdainfully on all tendencies and powers opposing homosexuality; but he does not try to analyze or explain this antagonism. It is true that the homosexual individual has a claim to justice and to objective, impartial judgment. The phenomenon itself is an inexplicable enigma, and its world-wide propagation in ancient and modern times renders it all the more difficult of solution. Aside from this universality we can not, by way of purely scientific reasoning, attribute to it any other descriptive term than that it is *abnormal*, according to our present knowledge. To say that it is unnatural is certainly a fallacy, first, because everything occurring in natural, i. e., in human or nature, life, is implicitly natural, and, secondly, because the favorite conclusion, "it is against my nature, consequently against nature," is illusionary and deceptive of one's self. But these intellectual deductions cannot blind our eyes to the existence of certain emotions which dominate the soul of the individual as well as the life of the peoples of the globe. It is evident beyond cavil that all men and all women of normal sexual sentiment have an innate aversion to all abnormal sexual practice, and particularly to homosexuality, and as certain as the existence of the latter is, so certain also is the psychological abyss separating heterosexuals and homosexuals. This is not only a psychological but also an anthropological fact, and accordingly an anthropological problem for investigation, as it pervades all mankind; for it cannot be mere coincidence that the laws of primitive

and of civilized peoples alike make provisions against abnormal intercourse.[1] The general animosity of law toward homosexuals is the crystallization of social and ethnic sentiment, and to study the foundations and reasons of this sentiment among peoples is one of the great requirements of anthropology. Certainly the question whether this sentiment is objectively justified or not, does not concern us as anthropologists, but moves along an entirely different line. This is also the reason why I believe that Mr Karsch, despite his noble efforts, will convince or convert few readers to his beliefs, which seem to culminate in the idea that homosexuality has the same privilege of existence as heterosexuality, a deduction which the majority cannot accept by reason of just those uncanny elementary ethnic emotional thoughts that haunt us common normal individuals, and which Mr Karsch, not being an anthropologist, is prone to stamp with such commonplace terms as prejudice and ignorance.

However all this may be, and how far our opinions may differ, it does not belittle the great value of Karsch's serious and thorough work, which deserves the widest attention of all thinking anthropologists.

B. LAUFER.

Sex and Society. Studies in the Social Psychology of Sex. By WILLIAM I. THOMAS. Chicago: University of Chicago Press, 1907. 12°, 366 pp.

This book is chiefly a collection of special articles published from time to time in periodicals. The chapter headings are: Organic Differences in the Sexes, Sex and Primitive Social Control, Sex and Social Feeling, Sex and Primitive Industry, Sex and Primitive Morality, The Psychology of Exogamy, The Psychology of Modesty and Clothing, The Adventitious Character of Woman, The Mind of Woman and the Lower Races.

The general anabolic and katabolic conception of the sexes is accepted by the author at the start as the organic basis of society. While this is now the traditional view in biology and sociology, the author presents arguments in support of this sex antithesis as expressed in psychic and social activities. On the social side the male is considered as unsocial, or disposed to wander about detached, while the female because of her association with children forms the nucleus of a social group. In a general way the theory of maternal descent is accepted, but the author rejects the idea that promiscuity is implied in such a condition for the tie binding the woman and the children is a real, if not the real, social bond. However, the ever prevailing tendency toward male social authority is considered

[1] See, e. g., Post, *Grundriss der ethnologischen Jurisprudenz*, II, pp. 390–392.

the logical consequence of his katabolic disposition, and in turn tends to make men social or at least amenable to domestication. The author attempts to show that men are in many respects still anti-social in the struggles of economic life.

It is considered that social feeling has an organic basis in the instinctive reflexive activities involved in the care of children. The general accepted ethnological view that women seem to have developed most of the industrial arts is introduced as additional support to the view that the mother is the real psychological and organic nucleus around which social conventionalities concentrate. The primitive division of labor, about which so much sentiment has been diffused, is treated as a social habit fallen into by men and women yielding to their instincts. Because of children and the instincts set off by their presence, the house became the habitual province of the women. Then the home with its women and industrial comforts developed monogamy, a habit fallen into by men and women in response to their conscious sexual life and the needs of the woman's family during the long growing period of the children. Exogamy is treated at length as due to psychological factors, such as preference for the unfamiliar, love of adventure, etc.

The book is in a way summed up in the last two chapters. As an adventitious character in society woman reveals the factors and conditions previously discussed. On the strictly psychological side the author is disposed to waive all race differences and also all sex differences, with the consciousness however that on a practical basis there are decided race and sex differences and that they are none the less real because social. According to the position taken, women are better equipped for social life than men and there is no apparent reason why they may not some time become the intellectualists and economic producers of society.

The above resume is too brief to do full justice to the author's plan of treatment. The parts of the book likely to be of greatest interest to the readers of this journal are the chapters on industry, exogamy, and mental differences.

The author's method is the more or less conventional one of the sociologist, which like all methods has many limitations. However, into the procedure of this method have been introduced the results of psychological methods and in this sense the author has made some important contributions to the subject as seen from the anthropological point of view. For example, the conscious factors in sexual activity as opposed to a pairing season and in turn the promiscuity have rarely received consideration in the classical works on marriage and the family. Without

taking this into account the arguments pro and con fall short of result. Again, the demand of our psychophysical life for powerful stimuli, or the conditions for the functioning of the emotions, can not be neglected and in this the author finds an explanation for the apparent relation between sexual and religious activities. The reviewer is not entirely in sympathy with the sociological method that takes general biological conceptions as points of departure in the construction of social theories. It should be noted, however, that the author, while outwardly conforming to that method, has insisted upon a human being with a complement of instincts as the point of departure, regardless of any conceptions as to the origin of the same. CLARK WISSLER.

L'Année linguistique. Publée sous les auspices de la Société de Philologie (Organe de l'œuvre de saint Jérôme). Tome II, 1903–1904. Paris: Klincksieck, 1904. 327 pp.

This second volume (lately received) of the Linguistic Year-book, edited by the Comte de Charencey, has ten bibliographical sections, as follows: Hindu languages (pp. 1–24), by Abbé A. Lepitre; Eranian languages (25–42), by Abbé Lepitre; Languages of the cuneiform inscriptions (43–80), by Abbé P. Bourdais; Basque studies, 1901–1904 (81–104), by Julien Vinson; Turkic philology since 1900 (105–146), by Lucien Bouvat; Bibliographical *aperçu* of works relating to the people of Malayan race (Malayo-Polynesian), published during the years 1901, 1902, and 1903 (147–186), by Aristide Marre; West African languages (187–203), by Captain Rambaud; Dêné languages (204–247), by Rev. A. G. Morice; Bibliographic and critical notice of the native languages of Mexico in the nineteenth century (249–281), by Dr Nicolas León; Esperanto (283–325), by Professor Guilbeau.

The first volume, which appeared in 1902, contained sections dealing with the Latin and Romance tongues, Celtic, Teutonic, Ethiopian, Basque, languages of the Far East, Malayo-Polynesian, Greenland Eskimo, and Books for the blind.

From this it will be seen that the "Linguistic Year-book" has not yet attained that inclusiveness which a work of this sort needs in order to be largely and permanently useful. It has also errors of commission as well as of omission, which, one may hope, will be eliminated in future issues. Twenty-four pages devoted to Basque, forty-two to the Turkic tongues, and forty-three to Esperanto, with no notice whatever of the languages of South America and recognition of those of North America north of Mexico limited to the Athapascan,— this leaves marked room

for improvement. With a more generous coöperation of anthropologists interested in linguistic bibliography (American Indian in particular), this year-book may develop into a real annual *compte rendu* worthy to rank beside the other "Années" which French scholars have presented to the world in so many different departments of science. A comprehensive and authoritative "Linguistic Year-book" would be a boon indeed. The divergence in method of treatment in the present volume may be seen by comparing Father Morice's Déné article, which is rather extended in its critiques, with A. Marre's Malayo-Polynesian bibliography, consisting (outside of a brief linguistic introduction) of a list of works arranged alphabetically by authors.

In the Mexican section Dr León catalogues 156 titles. From the introduction to his bibliography it appears that during the nineteenth century, at various times and in different educational institutions, the Nahuatl, Otomi, Zoque, and Tarascan tongues have been taught. At the Seminary-Colleges of Guadalajara (in Jalisco) and Morelia (in Michoacan) Nahuatl and Tarascan were still taught when Dr León's report was made. Father Morice's article consists of a general account of the chief features of the Athapascan language, followed by reviews and critiques of works by Petitot, Legoff, Washington Matthews, P. E. Goddard, and others, the last being treated at some length. Father Morice's strictures on Mr Goddard's work seem to the reviewer too dogmatic, since the critic is not himself an expert in Hupa, which Mr Goddard has studied in loco.

It is to be hoped that the *Année Linguistique* will continue to flourish and will be improved along the lines indicated.

ALEXANDER F. CHAMBERLAIN.

Physical Anthropology of Russia. By A. A. IVANOVSKIJ.[1]

The volume at hand is a most deserving and important attempt to summarize the anthropological observations made among the numerous nationalities which enter into the Russian population, in Europe as well as in Asia. The number and extent of these observations is astounding; the bibliography alone covers thirty-nine of the quarto pages and speaks volumes for our general ignorance of things Russian.

Some idea of the material utilized, as well as of the multiple ethnic elements of Russia, can be had from the following list of the principal peoples included in Ivanovskij's work:

[1] A. A. Ivanovskij: *Ob antropologicheskom sostavie nasedenija Rossii. Izviest. imp. obshch. liubitelej estestv., antropol. i etnogr.* (*Moskva*), Trudy antropol. otdiela, T. XXII. Moskva: 1904. 4°, pp. 1–287, 4 maps.

People	*Locality*	*Separate Series of Observations*
Abkhaztsy	Caucasus	5
Ainy (Aïnos)	Sakhalin Id.	20
Aisory	Caucasus	4
Armiane (Armenians)	Transcaucasia	12
Bashkhiry (Bashkirs)	Siberia	20
Bolgary (Bulgarians)	European Russia	3
Buriaty (Buriats)	Siberia	12
Russy (White-, Great- and Little-Russians)		180
Cheremisy	European Russia	7
Chechency	Caucasus	3
Chuvashi	European Russia	10
Chukchi	Siberia	8
Dungane	Central Asia	4
Evrey (Jews)	Mainly European Russia	75
Esty (Esthoneans)	Baltic Provinces	26
Finny (Finns)	Finland	10
Galcha (Galtchas)	Central Asia	8
Giliaky (Giliaks)	Siberia	8
Greky (Greeks)	Mainly European Russia	7
Gruziny	Caucasus	9
Gurijcy	"	4
Iakuty (Yakuts)	Siberia	6
Imeretiny	Caucasus	4
Ingushi	"	5
Kalmiky (Kalmucks)	European Russia	72
Karely	European Russia	3
Kirgizy (Khirghizes)	Transcaucasia	16
Kitajcy (Chinese)	Siberia	8
Kurdy (Kurds)	Transcaucasia	9
Latishi (Letts)	Baltic Provinces	11
Lezginy	Caucasus	5
Livy (Livonians)	Baltic Provinces	7
Litovcy (Lithuanians)	" "	12
Lopary (Lapps)	Finland, Northern European Russia	12
Meshcheriaky	European Russia	4
Mingrelcy (Mingrelians)	Caucasus	4
Mordva	European Russia	10
Niemcy (Germans)	Baltic Provinces	3
Orochony	Siberia	4
Osetinu	Caucasus	12
Ostiaky (Ostiaks)	Siberia	7

Permiaky	European Russia	3
Persy (Persians)	Transcaucasia	8
Poliaky (Poles)	Poland	36
Samaiedy (Samoyeds)	Siberia	5
Sarty (Sarts)	Transcaucasia	5
Svanety	Caucasus	4
Ssioty	Siberia	3
Tadziky	Central Asia	4
Tarancy	" "	4
Tatary (6 divisions) (Tatars)	European Russia, W. Siberia	29
Taty	Caucasus	3
Tsigane (Gypsies)	European Russia	15
Tungusy (Tunguses)	Siberia	9
Turky (Turks)	Transcaucasia	5
Turkmeny (Turkomans)	Central Asia	3
Uzbeky (Uzbecs)	" "	6
Voguly (Voguls)	Siberia	5
Votiaky (Votiaks)	"	5

The analysis shows a great predominance of dark (brunette) types in the Asiatic part of the empire, and of mixed types in European Russia. Blonds are found in relatively large numbers in only a few localities in western Russia (about Kamenec, Kovno, Vilna, and Riga), and in Finland. In percentages the relations of these types in European Russia may be expressed as follows:

European Russia	*Blond Type* percent	*Mixed Color* percent	*Brunette Type* percent
Western portion	33	43	24
Eastern "	14	38	48
Central "	26	48	26
Southern "	21	35	44

The stature is generally low among the natives of Siberia, rising however among those of central Asia. The natives of the Caucasus and Transcaucasia are rather tall. In western Russia tall statures correspond quite closely to the distribution of the blond type. In European Russia on the whole the conditions are as follows:

	Below 1.600 meter percent	1.601 to 1.650 meter percent	1.651 to 1.700 meter percent	Above 1.700 meter percent
Western portion	19	25	30	26
Eastern "	32	27	23	18
Central "	26	25	25	24
Southern "	24	28	29	19

The cephalic index throughout European and particularly throughout Asiatic Russia is predominantly brachycephalic. There is no locality in which the larger part of the population is dolichocephalic; the nearest approach to this condition is found in a portion of Transcaucasia, in the Merv oasis, and over the southern part of Sakhalin. The percental distribution of the index in European Russia is as follows:

	Dolichocephalic percent	Mesocephalic percent	Brachycephalic percent
Western portion	15	19	66
Eastern "	14	15	71
Central "	17	20	63
Southern "	15	17	68

Besides the above the author gives synthetic tables of the facial and nasal indexes, the length of the trunk, circumference of the chest, with length of the hand and foot, and closes with useful tables of classification.

On the whole, Ivanovskij's work, while not superseding individual publications in point of details, constitutes a most useful book of reference on the physical anthropology of the Russian people; and the extended bibliography itself is of great value. ALES HRDLICKA.

Handbook of American Indians North of Mexico. Edited by FREDERICK WEBB HODGE. In Two Parts. Part I. (Smithsonian Institution. Bureau of American Ethnology. Bulletin 30.) Washington: Government Printing Office, 1907. 8°, ix, 972 pp., map, many text figures.

The present volume is certainly a notable achievement in American ethnology. As its name indicates, it is a handbook combining the features of a dictionary, cyclopedia, gazetteer, and bibliography of things pertaining to the aboriginal inhabitants of North America north of Mexico, one of the chief aims being to provide a key to the intricate nomenclature of tribes and minor divisions. Everyone who has attempted to use the available literature in working out the aboriginal culture of any part of the continent realizes the great value of such a key in establishing the identity of tribes appearing under almost as many names as there are writers. In addition to such a key specific references to the use of the various terms are given, so that the work as a whole is a systematic bibliography of North American ethnology. The list of titles also includes practically all important native villages with their location, and the ethnic relations of their inhabitants, and under each tribal name general historical and anthropological information. Another interesting feature is the presentation of brief biographies of the many Indian per-

sonalities whose names appear in the detail history of America. Archeology is represented by brief accounts of the most important ruins and a series of general articles on the various kinds of artifacts upon which our present conclusions with respect to that subject are based, as well as on the materials of which they are made. In addition there are a large number of such general topical and miscellaneous articles as one may expect to find in such a book. The appearance of the pages is enlivened by numerous illustrations of specimens, ruins, tribal types, and portraits of noted Indians. Finally may be mentioned a revision of Powell's map of linguistic families north of Mexico.

While the preparation and publication have been under the direction of the Bureau of American Ethnology and edited by F. W. Hodge, articles were contributed by some forty-six specialists, whose initials are appended to their respective contributions.

The present volume extends from A to M. To review adequately its contents is out of the question, so we may pass over the detailed information to the more general articles. Of these the most conspicuous are those dealing with tribal or other recognized divisions. So far as the observation of the reviewer goes their titles comprise the entire official list. These articles average about a page and a half, giving an historical and ethnological summary of the respective tribes. There are also similar articles on the largest and best known linguistic stocks. In some cases the contents of these articles are arranged under convenient sub-heads, such as history, social organization, archeology, and customs, but in many cases the contributors so interwove their data that the placing of such heads was an impossibility. The Hurons, Hopi, and Cheyenne have been allotted an unusual amount of space, though the content and mode of treatment is not essentially different from that accorded the other articles. The physical characters and anthropometry of the different tribes have not received special treatment, but this deficiency is in part offset by illustrations.

There is a long list of major articles on other topics. The various typical objects found in all archeological and ethnological collections are described, with notes on their technology and distribution. There are articles on Archeology, Language, Art, Architecture, Mythology, the Family, Marriage, Anatomy, Government, Children, Missions, Education, Games, etc. The article on Missions occupies some thirty-five pages, being a rather detailed historical account presented by geographical areas. While this is justifiable because of the long and intimate connection between the Indians and the missionary, the article on the Fur-

trade is perhaps too brief. One gets the impression that many of these articles, such as Language, Archeology, Art, Mythology, etc., were intended as summaries of our present knowledge, and assuming them to be such the reader may without difficulty form some idea of the status of ethnological research in America. Taking the ninety-odd major articles of this general character as a whole, they may be regarded as reflecting the state of our present knowledge of things pertaining to the ethnology of North America, and so taken indicate that while there is much wealth of detail suggesting great activity in acquisition, in minute and special localities there is need of systematic organization even though it be academic and dominated by one or two general theories. One turns from the article on Archeology, for example, with the feeling that while the best that can be said is there, the whole subject is still quite chaotic.

The treatment of Habitations and of Architecture illustrates one of the difficulties in the construction of such a work as this. Under the former are given architectural features and distribution of types, while under Architecture are treated the conditions affecting construction, including a general ethnographic sketch with the distribution of forms. As the same kind of details are found in each, and the illustrations in each, while not exact duplicates, are chiefly representatives of the same type, the reader is at some loss as to the distinctive character of the two articles. However, the book as a whole appears singularly free from such confusion of topics.

The great mass of titles treated in the book are Indian settlement and group names, names of noted Indian chiefs, and Indian words now a part of our own speech. In each case many forms of the word are given, with references to the publications in which they are found. We are promised a cross-reference to these names in the final volume, without which the detailed lists appended to each title would not always be a ready means of locating the term desired. This feature will make the work indispensable to curators and private collectors who often encounter specimens listed as from obscure localities or social groups.

For the work as a whole, the reviewer can not refrain from an expression of admiration. The conception of such a hand-book strikes one as unique, and the patience and courage to carry the plan to completion as unusual. America is, perhaps, the only place in the world where such an idea could be worked out, and if its Bureau of American Ethnology and its work have seemed unique in the eyes of European ethnologists, the completion of this publication alone must appear as a sufficient justification of the existence of such a bureau. CLARK WISSLER.

PERIODICAL LITERATURE

CONDUCTED BY DR ALEXANDER F. CHAMBERLAIN

[NOTE. — Authors, especially those whose articles appear in journals and other serials not entirely devoted to anthropology, will greatly aid this department of the *American Anthropologist* by sending directly to Dr A. F. Chamberlain, Clark University, Worcester, Massachusetts, U. S. A., reprints or copies of such studies as they may desire to have noticed in these pages. — EDITOR.]

Andersson (J. G.) Karl Ahlenius. (Ymer, Stckhlm, 1906, XXVI, 305–12, 1 fg.) Sketch of life and scientific activities of Ahlenius (1866–1906), the Swedish geographer, etc.

Andree (R.) Emil Schmidt. (Globus, Brnschwg., 1906, XC, 309–12, portr.) Sketch of life and appreciation of scientific labors (notes on chief publications), of Dr E. Schmidt (1837–1906). See *American Anthropologist*, 1907, IX, p. 236.

Audenino (E.) *e* **Gualino** (L.) La "Facies Napoleonica." (A. d. V. Congr. Int. di Psicol. Roma 1905, 1906, 674–5). The authors claim to find in certain men of genius (Rameses II, Alexander the Great, Charlemagne) and certain American Indians, etc., the *facies Napoleonica*, characteristic of the great Napoleon ("a true type of the epileptic genius"). Dr De Sanctis thinks it a mere accident of resemblance.

Blümml (E. K.) Kuntsdichtung und Volkslied. (Hess. Bl. f. Volksk., Leipzig, 1906, V, 124–33.) Discusses the folk-song aspects of certain poems in Heine, Dahn, Hauptmann, Greif, Mönke, Castelli, et al.

Chamberlain (A. F.) Variation in early human culture. (J. Am. Folk-Lore, Boston, 1906, XIX, 177–90.) Treats of "ride-a-cock-horse" and Breton boat-rhymes, father and mother (Hebrews, Iroquois, Japan, American Indians), kissing and kiss-words, meal-time, use of tobacco, sea-sense as exemplifying normal variations within the essential unity of mankind.

Cree (A. T. C.) Back-footed beings. (Folk-Lore, Lond., 1906, XVII, 131–40.) Discusses the attribution to redoubtable persons, powerful beings, spirits, etc., of inverted knees and feet, an idea occurring in mythology and folk-lore all over the globe. According to C., "there is no essential difference between the bird-footed and the back-footed human beings," and "'back-footed' beings are connected with the ornithomorphic spirits so frequently found in mythology." The assumption of a bird-form is a favorite voluntary metamorphosis in folk-tales. Often, later, the legs or the feet are the only ornithomorphic feature to persist.

Denny (C. H.) Jeremiah Curtin. (Harv. Grad. Mag., Cambr., 1907, XV, 356–61, portr.) Appreciative sketch of life and works of the ethnologist C. (d. 1906). At his death he left nearly finished works on the Mongols and the Buriats. See *American Anthropologist*, 1907, IX, 237.

Dräseke (—) Zwei Präparate von rachitischen Tieren. (Z. f. Ethn., Berlin, 1906, XXXVIII, 751–2.) Brief accounts of the very rachitic skull of a ten-year-old dwarf dog and the skull of a rachitic *Cynocephalus* monkey. In the dog and the monkey the rachitis appears in two very different forms.

van Gennep (A.) La musée ethnographique de Cologne. (Mercure de France, Paris, 1907, LXV, 78–83.) Brief account of the new Ethnographic Museum at Cologne, formally opened Nov. 12, 1906. The Rautenstrauch-Joest Museum (from the names of the donors of the building and much of the material exhibited) contains 18,600 specimens and is under the direction of Dr W. Foy. The building is T-shaped. A guide-book has recently been issued, which is a brief ethnographic manual.

Gheorgov (J. A.) Einiges über die grammatische Entwicklung der Kindersprache. (A. d. V. Congr. Int. di Psicol. Roma 1905, 1906, 203–210.) Treats of the chief points in the grammatical development of the language of

the author's eldest son (verbal and nominal forms, plural, comparison of adjectives, numerals, pronouns, adverbs, prepositions, conjunctions, syntax, sentences, etc.) from the 412th to the 1076th day. Dr F. Krueger, in the discussion, added some data concerning a German boy (6th month to end of 3d year). Prof. G. points out that the psychogenesis of the child is much influenced by its linguistic environment — it must express itself, in Bulgarian, e. g., differently than in German or English.

Giuffrida-Ruggeri (V.) Forame sottotraversario dell' atlante. (Mon. Zool. Ital., Firenze, 1906, XVII, 8'-9.) Describes the occurrence in the skull of a Guayaqui Indian from the Argentine Gran Chaco, of a sub-transverse foramen of the atlas and compares it with other similar anomalies.

—— Caso di soldatura sacroiliaca bilaterale e processo ischiatico anomalo. (Ibid., 205-7, 2 fg.) Describes a case of bilateral sacro-iliac synostosis and anomalous ischiatic process in a pelvis in the museum of the University of Rome.

Goldstein (F.) Politik, Staatswissenschaften und Ethnographie. (Globus, Brnschwg., 1906, XC, 332-5, 342-5.) Author points out the neglect of the facts of social economy by many investigators and ethnographers. G. holds that in the life of peoples little depends on race (or on nature), the determining factor being the "creations of man," i. e., his use and subjection of nature. Man has become man only through work, with whose aid he created speech.

Gualino (L.) Un nuovo craniometrografo. (A. d. V. Congr. Int. di Psicol. Roma 1905, 1906, 606-9, 2 fg.) Describes briefly a new craniometrograph devised by Dr G. of Turin for facilitating and rendering more objective the determination of the norma verticalis.

Hellwig (A.) Das Einpflöcken von Krankheiten. (Globus, Brnschwg., 1906, XC, 245-9.) Treats of "plugging" diseases in trees, pieces of wood, burying particles of the body of the sick (nails, hair, excrements, etc.) in holes made in trees, etc., and allied practices in folk-medicine in Germany, Austria, etc., — also among gypsies and criminals.

Helm (H.) Adolf Strack. (Hess. Bl. f. Volksk., 1906, Leipzig, V, i-vii, 1 fg.) Sketch of life and folkloristic activities of A. Strack (1860-1906).

Heron (D.) On the inheritance of the sex-ratio. (Biometrika, Cambridge, 1906, V, 79-85.) The anthropologic data are from material on the size of families (348 cases) collected by Prof. K. Pearson, and (2197 families) from S. W. Whitney's *The Whitney Family of Connecticut* (Newport, 1878, 3 v.). No sensible inheritance of sex is shown. Such differences of sex-ratio as exist are probably associated with environment, nutrition, habit, etc., and not an inherited character of race. See *Woods* (F. A.)

King (I.) Some notes on the so-called gift of tongues. (Am. Friend, Phila., 1906, XIV, 102-3.) Compares "speaking in unknown tongues" with phenomena noted among primitive peoples (Negroes of the Niger valley, Polynesians) and little children. These he considers "automatic babblings"—not real languages of any known sort. The "gift of tongues" is thus an abnormal psychic phenomenon of language and not a divine favor.

Lehmann (W.) Geh. Hofrat Prof. Dr Ernst Förstemann. (Globus, Brnschwg., 1906, XC, 341-2, portr.) Brief account of life and works. See *American Anthropologist*, 1907, IX, 153-9.

Marcus (M.) Ekonomisk geografi. Några synpunkter. (Ymer, Stckhlm., 1906, XXVI, 347-362.) Treats of recent theories and investigations in economic geography.

Marro (A.) Sulla influenza dello sviluppo pubere sulla criminalità. (A. d. V. Congr. Int. di Psicol. Roma 1905, 1906, 673-6.) The oncoming of puberty induces a condition of psychic hyperesthesia and offensive automatism. Among the cures M. counts coeducation.

Matteuzzi (A.) L'influenza dell'ambiente geografico e dell'eredità dei caratteri acquisiti nell'evoluzione e nella dissoluzione dei popoli. (Ibid., 448-9.) Résumés briefly the arguments of the author's book, *Les Facteurs de l'Évolution des Peuples* (Paris, 1901).

Niceforo (A.) Les classes pauvres. (Ibid., 732-4.) One section of Prof. N.'s studies of the poor classes dealt with ethnographic characters (culture, beliefs, customs, usages, prejudices, arts, religion, etc.), and he finds that "the ethnography of the classes on the lowest steps of the social and economic ladder repeats exactly the ethnography of primitive and savage peoples." The details of his investigations are to be found in

his recent volume *Les classes pauvres: Recherches anthropologiques et sociales* (Paris, 1905).

Ottolenghi (O.) Il tipo facciale in 600 pregiudicati. (Ibid., 677.) Prof. O. found the facial type abnormal in 50 percent of convicted criminals, with a notable prevalence of the asymmetric.

Pearson (K.) Walter Frank Raphael Weldon, 1860-1906.) Biometrika, Cambridge, 1906, v, 1-52, 4 pl.) Treats of life, character, and scientific works of Dr Weldon. His anthropological essays included studies on albinism in Sicily, assortative mating in man, etc.

Petrie (W. M. F.) Migrations. (Man, Lond., 1906, 170.) Abstract of Seventh Annual Huxley Memorial Lecture, Nov. 1, 1906. P. concludes that "a people become adapted to their environment in about 1,000 years, even where there is very little mixture to cause changes," and that "migrations are the inevitable means of supplanting the less capable by the more capable races." Bars to free-leveling by peaceful migration (e. g., exclusion laws) are confessions of weakness; the salvation from immigration lies in thorough weeding of native inhabitants. In 10,000 years of civilization in Egypt, 13 changes in the population (originally Algerian-Amorite) can be traced.

Rabaud (É.) La forme du crâne et le développement de l'encéphale. (R. de l'É. d'Anthrop. de Paris, 1906, XVI, 37-46.) Discusses the rôles of the cranial envelope and the cerebral tissue in the development of the form of the skull — proencephaly, scaphocephaly, acrocephaly, trigonocephaly, plagiocephaly, exencephaly, and trochocephaly are briefly considered. R. concludes that all spontaneous deformations of the skull cannot be the result of action and reaction between the bony structure with arrested growth and the normally developing brain. Trochocephaly, e. g., is one example of another sort.

Restelle (W.) Traditions of the deluge. (Biblia Sacra, Oberlin, O., 1907, LXX, 148-167.) Treats briefly of Chaldean, Hindu, Chinese, Greek, Celtic, Mexican, Peruvian, Algonquian (Manabozho), Quiché, Orinoco Indians, Maori, etc., legends. According to R., "the Indian and Greek traditions betray signs of Semitic influence," while "the American Indian legends bear the stamp of Christian teaching, or else refer only to local floods." He is also of opinion that "thus does man almost universally testify in his tradition and religions . . . to the almost entire destruction of the race by a terrible deluge. R. does not refer to the studies of Andree, User, etc.

Robinovitch (L. G.) Remarks on a specific human energy and its economic and social significance. (A. d. V. Congr. Int. di Psicol. Roma 1905, 1906, 734-44.) Discusses "race-suicide" (and its alleged causes), early marriage, genesic dissipation (e. g., in large families, with degenerate and defective children, etc.). Dr R. thinks that "civilization is not responsible for race suicide" — it has existed from time immemorial, even among savage tribes. The great social evil in the matter "lies not in the reduced birth-rate, but in an overproduction of births that are useless, costly to the state and dangerous to society." This is apparent among poor and rich alike. The cure will be found in the progressive development (not forcing by legal enactment) of the economic handling of the genesic function.

Robinson (R.) Sur une formation épineuse caractéristique des dernières vertèbres dorsales chez l'homme. (C.-R. Acad. d. Sci., Paris, 1907, CLXIV, 584-6.) Describes certain "sub-lamellar spines," not occurring before the 30th year of life, and useful, as a sign of age, in legal medicine.

Schmidt (W.) Die moderne Ethnologie. L'Ethnologie moderne. (Anthropos, Salzburg, 1906, I, 950-97.) Concluding section of a general discussion of modern ethnology, its nature, methods, problems, etc. Treats of Wundt, the significance of the terms ethnology, ethnography, anthropology, etc.

Sinclair (A. T.) Notes on the Gypsies. (J. Amer. Folk-Lore, Boston, 1906, XIX, 212-14.) Discusses stealing children (popularly, but wrongly, thought characteristic), honesty (not more given to thieving, etc., than other poor ignorant people in the community), chastity (women unchaste very rare).

Wilser (L.) Studien zur Vorgeschichte des Menschen. (Globus, Brnschwg., 1906, XC, 225.) Critical note on Schwalbe's recent publications on prehistoric man. W. agrees with Schwalbe in rejecting Kollmann's pigmy theory.

Woodward jade collection. (Museum News, Brooklyn, N. Y., 1906, II, 20-27.) Notes on "the qualities, history,

distribution, significance, and methods of working jade," based on the Catalogue of the Bishop Collection in the Metropolitan Museum.

Xénopol (A. D.) Explication psychologique des faits historiques. (A. d. V. Congr. Int. di Psicol. Roma 1905, 1906, 356-64.) According to X., "history is only a perpetual application of individual psychological studies."

EUROPE

Andree (R.) Zum Haustieralter des Pferdes. (Globus, Brnschwg., 1906, XC, 224.) Discusses the recent article of Piette on halters in *L'Anthropologie* for 1906 (see *American Anthropologist*, 1907, IX, 215). A. agrees with Piette that a "semi-domestication" of the horse must have occurred in prehistoric France. This paleolithic fact overturns the theory that the domestication of the horse in Europe is due to Asiatic immigrants.

Bellucci (G.) Il feticismo primitivo in Italia. (A. d. V. Congr. Int. di Psicol. Roma 1905, 1906, 144-6.) Résumé of study based on the author's collection of 720 amulets and fetishes. These represent the existence and persistence of primitive fetishism in Italy. With amulets go religiosity, a real cult. The evolution of amulets is interesting — a fossil or an amorphous stone may end by being fashioned into a cross or a figure of the Virgin or of Jesus.

Braus (H.) Leichenbestattung in Unteritalien. (A. f. Religsw., Leipzig, 1906, IX, 385-96, 1 pl.) Discusses from personal observation, burial and exhuming, etc., in southern Italy (Naples, Sicily, etc.). Exhumation of the body after a short time and its deposition in niches, etc., is general for those who can afford it; the poor stay underground, the rich are exhumed. Behind the exhumation is the idea of keeping, if possible, all portions of the body from destruction.

Breuil (H.) Les Cottés, une grotte du vieil âge du renne à St.-Pierre de Maillé, Vienne. (R. de l'Éc. d'Anthrop. de Paris, 1906, XVI, 47-62, 11 fg.) Describes the Grotte des Cottés, explored in 1880 by Comte O. de Rochebrune, and the finds there made — animal remains, implements of bone, horn, ivory (some tubes in reindeer horn are said to resemble Eskimo needle cases), flints, and flint tools of various sorts.

Crohns (H.) Die Summa Theologica des Antonin von Florenz und die Schätzung des Weibes im Hexenhammer. (Acta Soc. Sci. Fenn., Helsingf., 1906, XXXII, no. 4, 1-23.) Interesting discussion of the ascetic denunciation of woman at the close of the Middle Ages in relation to witchcraft, particularly the *Summa theologica* (1477) of Antonine of Florence and his elaboration of the alphabet of woman's peculiarities and evil qualities, due originally to Johannes Dominici (1357-1419). The famous *Malleus Maleficarum* (1487) is also considered.

Cumont (F.) Jupiter summus exsuperantissimus. (A. f. Religsw., Leipzig, 1900, IX, 323-36.) Discusses the title *Jupiter exsuperantissimus*. (8 inscriptions from Italy, Gaul, Germany, etc., are cited, all probably not anterior to the second half of the second century), with archeological and literary data of interpretation. C. considers *Jupiter e.* to be the Roman equivalent of the Semitic *Ba'al šamin*. He represents the influence of Syrian cults, of Oriental astrology; the Syrian god, adopted by Commodus, later became almost Christian.

Diehl (D.) Zur Geschichte der Kirchhöfe. (Hess. Bl. f. Volksk., Leipzig, 1906, V, 71-75.) Adds to data of article in previous volume, from a sermon published in 1612, from a hymn of J. Heerman (d. 1647), etc., concerning the "Kärner," and "Sippengrab."

v. Domaszewski (A.) Die Juppitersäule in Mainz. (A. f. Religsw., Leipzig, 1906, IX, 303-11.) Treats of the recently discovered "Jupiter columns" of Mayence, the sculptures, inscriptions, etc., upon them, the divine names mentioned, etc. The model for this work of the Augustan epoch is to be found in Massilia.

Englert (A.) Ein kleiner Beitrag zur Geschichte der Hexenprozesse. (Hess. Bl. f. Volksk., Leipzig, 1906, V, 65-71.) Reprints, with commentary and explanatory notes, a poem from a fly-sheet of 1629 published at Aschaffenburg, based apparently on some trial for witchcraft.

Fairbanks (A.) The message of Greek religion to Christianity to-day. (Bibl. World, Chicago, 1906, XXIX, 111-20.) Prof. F. holds it a mistake to speak of Greek religion as "primarily a worship of beauty" and to style the Greeks "nature-worshipers," for "Greek worship is no less human than Greek gods," and "the intellectual element in Greek religion was dominant" for that very

reason. Another fundamental fact is "the local character of the gods in worship." The failure of Greek religion was due to the people. The very core of Greek religion is "its worship of humanity in and through its gods." To-day we distinguish too sharply the natural and the supernatural.

Faraday (L. W.) Custom and belief in the Icelandic sagas. (Folk-Lore, London, 1906, XVII, 387–426.) Valuable résumé from various Icelandic sagas (chiefly in 10th century) of data concerning custom and belief: Gods (matter-of-fact attitude; keeping of sacro-sanct animals), hero-worship and underworld deities; burial customs and hero-cults (two beliefs as to state of dead: life in the home or burial-mound and the journey to Valhalla; other inconsistent ideas); tomb-treasures a fruitful producer of myth; divination practised chiefly by women; feasts and sacrifice (winter nights, yule, midsummer, significance of the horse); magic (shape-shifting, blunting swords, protection against wounds, weather-spells), etc. According to Miss F., "the records of Scandinavian paganism are the very reverse of the Roman, where myth is scanty, and custom and ritual abundant." This is "a natural race distinction."

Favreau (P.) Ueber die Hundisburger Kiesgrubenfunde. Eine sachliche Erwiderung gegen d e pesönlichen Angriffe des Hrn. Wiegers. (Z. f. Ethn., Berlin, 1906, XXXVIII, 741–4.) Reply to criticisms of Wiegers concerning the finds of worked flints, etc., in the Hundisburg gravel-pits.

Feilberg (H. F.) Das nordische Weihnachtsfest. (Hess, Bl. f. Volksk., Leipzig, 1906, V, 26-40.) Résumés the ideas of the author concerning the Scandinavian Christmas festival, given in detail in his recent work on *Jul* (2 v., Copenhagen, 1904). F. argues that Yule has about it many indications of a feast of the dead, is in fact what is left of an ancient cult of spirits; it corresponds to the festival of All Saints in the South.

Frödin (O.) En svensk kjökkenmödding. Ett bidrag till de postglaciala nivåförändringarnas historia. (Ymer, Stockholm, 1906, XXVI, 17–35, 8 fg.) Treats of the kitchen-midden discovered in the summer of 1905 by G. Hallström at Ånneröd, in the parish of Skee, 3 km. N. of Strömstad, and the finds there made (flint implements, stone tools, fragments of pottery pitted and punctated), bones of animals, shells, etc.

Giuffrida-Ruggeri (V.) Das sog. Aussterben der Neandertal-Spy-Rasse. (Globus, Brnschwg., 1906, XC, 253–5.) Discusses the various theories put forth to account for the "dying out" of the Neandertal-Spy race (spontaneous dying off; forcible extermination; dying out as a result of evolution; dying out as a result of crossings). Dr G.-R. thinks that Schwalbe exaggerates the differences between *Homo primigenius* and *Homo sapiens*, and believes that to early or late crossings is due the incomplete dying out of this race which is probably related genetically to the Frisians.

Gothein (Marie). Der Gottheit lebendiges Kleid. (A. f. Religsw., Leipzig, 1906, IX, 337–64.) Interesting discussion of "the living garment of deity" of Goethe's *Faust* and its analogues (Neoplatonic, mediæval writers of France, etc., nature-philosophy of later centuries). The author concludes that the metaphor was the product of learned speculation, not the creation of folk-consciousness.

Gray (H. St G.) A remarkably thin arrow-head from Cannington Park Camp, near Bridgwater, Somerset. (Man, Lond., 1906, 149–50, 1 fg.) Describes a pear- or leaf-shaped arrow-head "of remarkable thinness and graceful and symmetrical form." It was found in connection with flints, pottery of Bronze age and late Celtic type, etc. It resembles certain Irish arrow-heads.

Grosse (H.) Einige Erden aus der Gegend von Sonnewalde im Kreise Luckau. (Z. f. Ethn., Berlin, 1906, XXXVIII, 802–3, 3 fg.) Suggests experiments with raw material to discover prehistoric technique, etc. Also describes some "fire-rings," a roller for marking pottery, etc.

Hadzsits (G. D.) The Lucretian invocation of Venus. (Class. Philol., Chicago, 1907, II, 187–92.) H. considers that this "typical Epicurean prayer" is *pia* and *sancta*, "the frank and outspoken *supplicatio* of an Epicurean," and in no sense hypocritical parade, or return to the old religion.

Halbfass (W.) Ist der Bodensee ein Internationaler See. Eine Studie zur Anthropogeographie der Seen. (Globus, Brnschwg., 1906, XC, 229–32.) Discusses the questions connected with the position of the Bodensee, a lake which

touches on Baden, Würtemberg, Bavaria, Austria, and Switzerland (2 cantons).

Hall (Edith H.) The decorative art of Crete in the Bronze age. (Univ. of Penn. Trans. Dept. Archeol., 1906, II, pt. 1, 5-49, 2 pl., 68 fg.) Treats of the "early Minoan," "middle Minoan," and "late Minoan" periods (each with three subdivisions) of Cretan Bronze-age pottery, covering some 2000 years of artistic development — from the simplest linear geometric ornament — particularly the zigzag — to the unintelligently copied debased forms of naturalistic motives characteristic of the last period considered.

Hellwig (A.) Zwei eigenartige Fälle von Grabschändung. (Hess. Bl. f. Volksk., Leipzig, 1906, V, 75-82.) Cites two instances of grave desecration from superstition (holes for putting hand through made in coffins of boys), possibly "corpse-touch" for cure of disease, etc.; possibly also a case of sex-fetishism.

Helm (K.) Aus der Wochen-Comoedie des Wigand Sexwochius, 1662. (Ibid., 40-61.) Interesting account, with numerous extracts, comments, comparative notes, etc., of a comedy treating of childbed, which preceded by a long time Holberg's famous *Barselstuen* (1723). Much folk-lore is contained in this work.

Hildburgh (W. L.) Notes on Spanish amulets. (Folk-Lore, Lond., 1906, XVII, 454-71, 5 pl.) Treats of horns, lunar-crescents, boar-tusks, crustaceans' claws, hands, coral, jet, bells, badgers, sirens, eye-forms, evil-eye objects, amulets for infants, shells, bones from fish's head, seeds, stone and glass beads, religious amulets, gipsy amulets, etc., from various parts of Spain. The employment of the ancient amulets "seems to be rapidly disappearing," religious medals (formerly worn simultaneously) taking their place.

—— Spanish votive offerings. (Ibid., 471-2, 1 pl.) Brief note on *milagros*, chiefly of cheap white metal. *Exvotos* are chiefly used in Spain, and are usually of rude execution.

Hinrichsen (*Hr.*) Die Landverteilung auf den Halligen. (Globus, Brnschwg., 1906, XC, 124-6.) Treats of the partition of land on the Frisian islands, — *Nuaodsgeers* (grass necessary for a cow from the middle of May to the end of August), *Meedeland* (hay-fields), etc. — and the regulations concerning their use.

Holl (K.) Die Entstehung der Bilderwand in der griechischen Kirche. (A. f. Religsw., Leipzig, 1906, IX, 365-84.) H. produces evidence to show that the *ikonostasis* ("picture-wall," the name is quite modern) in the modern Greek church, which separates the altar space from the nave, represents, even in details, the proscenium of the ancient Greek theater — another proof of the "theatrical" character of the worship of the Eastern church.

Holst (N. O.) Flintgrufvor och flintgräfvare i Tullstorpstrakten. (Ymer, Stckhlm., 1906, XXVII, 139-74, 14 fg.) Discusses with detail the "flint mines" in the Tullstorp district of southern Sweden and their working in prehistoric times; the objects found, flints, pieces of horn, bones of domestic animals (including the skull of a dog), fragments of pottery, etc. The epochs represented are the later Stone age, the Bronze age, and the earlier Iron age.

Kaumanns (F.) Der Adlerstein als Hülfsmittel bei der Geburt. (Hess. Bl. f. Volksk., Leipzig, 1906, V, 133-56.) Discusses, with numerous references to the literature of the subject, the folk-lore of the "eagle-stone" or *ætites* as a help in cases of difficult childbirth, etc. The *piedra della gravidanza* is still used in Italy, and the *Adlerstein* in Bavaria, in fashions corresponding to its use in the Middle Ages and in ancient times.

Kendall (H. G. O.) The flint supplies of the ancient Cornish. (Man, Lond., 1906, 150-1.) Flint is not native to Cornwall, so far as known. The character of the flint implements found suggest at least two, and perhaps three different sources of supply. The types suggest the Bronze age. Perhaps the lost fringe of Cornwall (cf. Lyonesse) was a source of flint supply.

Kjellmark (K.) Om eoliterna. (Ymer, Stckhlm., 1906, XXXVI, 325-40, 2 fg.) Treats of the English "eoliths," those of France, the finds of Rutot, etc., in Belgium. MacCurdy's "Eolithic Problem" published in the *American Anthropologist* (1905) is referred to. There are now *eolithophobes* and *eolithophiles*.

Knoop (O.) Polnische Dämonen. II. (Hess. Bl. f. Volksk., Leipzig, 1906, V, 83-91.) Treats of the Polish "demons"; Boruta, the treasure-demon, the "devil" of the nobles, who appears in connection with Tvardovski, the Polish Faust; the *smok* (a many-headed dragon or lion);

the *smolnica*, a female demon with a cat-carriage; the *poludnica*, or "noon lady," a grain-demon; the "white ladies," etc.

Kopp (A.) Liebesrosen' 1747. (Ibid., 1–26.) Discusses with historical and comparative notes the 32 love-songs, etc., of a collection published in 1747 (some were used by Hoffmann). Many of these songs are reproduced in the original texts.

Kupka (*Dr*) Ueber einen Fundort der älteren Steinzeit bei Calbe a. Milde. (Z. f. Ethn., Berlin, 1906, XXXVIII, 744–8, 13 fg.) Describes a find of the older Stone age near Calbe (here about 2000 flints and fragments were discovered in the course of a year; K. has examined more than 500): Flint arrow and spear heads, scrapers, "saws," etc.

—— Urnenfunde von Heiligenfelde und Lückstedt, Kr. Osterburg, Altmark. (Ibid., 749–50, 7 fg.) Notes on finds (pottery of bellied type with ear-handle; bronze needle and part of necklace) from gravel-pit at Heiligenfelde, etc.

—— Steingeräte aus der Gegend von Arneburg an der Elbe. (Ibid., 804–5.) Describes briefly flint implement of various sorts, highly patinated, from the bed of the Elbe. Also others from the plateau above the river.

Lebbin (G.) Speise und Trank im Zeitalter Homers. (Pharm. Ztg., Berlin, 1906, 698–700.) Treats of food and drink in Homeric times. The diet of the common people was predominantly vegetarian. Roasting meat on the spit was done by princes *sua manu*. Water does not seem to have been drunk without the addition of something else. Poison-mixtures were well known.

Lombroso (C.) Sulle cause della genialità ateniese. (A. d. V. Congr. Int. di Psicol. Roma, 1905, 1906, 665–7.) Note, with abstract of discussion. L. holds that freedom is the greatest possible stimulus for the full intellectual development of a people. Athens, Florence, and Venice illustrate this view.

Macdonell (W. R.) A second study of the English skull, with special reference to Moorfields crania. (Biometrika, Cambridge, 1906, V, 86–104, 12 pl.) Discusses, with details of measurements and description, 121 skulls from the Moorfields site (probably Defoe's "plague pit" of 1665), compared with a previously studied series of Whitechapel skulls. M. concludes that "the Whitechapel and Moorfields skulls . . . represent the typical London skull of two centuries ago, and, notwithstanding some differences, especially in height measurements, the type can be described as approaching that of the Long Barrow men." These investigations give no very flattering idea of the English skull.

Meehan (J.) The cure of elf-shooting in the northwest of Ireland. (Folk-Lore, Lond., 1906, XVII, 200–10.) Describes the "cure" of elf-shot cows by the "elf-doctors," a practice now just dying out. The beast is "measured," treated to "three-measure-water," etc.

Mehlis (C.) Der Mauzenstein bei Herrenalb. (Globus Brnschwg., 1906, XC, 317–18, 2 fgs.) Treats of a pitted boundary-stone in the Baden-Württemburg Black forest, which M. explains as an elf-altar (perhaps to the goddess Abnoba, or to Epona). The "Mauzenstein" is now all that is left of the old Gallic cult-place that was succeeded by a Germanic place of sacrifice.

Morrison (J. L.) Ancient legend and modern poetry in Ireland. (Scot. Hist. Rev., Glasgow, 1907, IV, 164–77.) Review and critique of recent works by Lady Gregory, W. B. Yeats, etc. The days of neglect in Celtic lore are now over. It is time that so strange and vast a figure as Cuchulain "became familiar in the eclectic hero-world of modern civilization." The natural resort for Irish poets, as sources of lyric inspiration, are the loveliest and most moving episodes of Celtic myth. But partial aid only from the past — "to every prophet his own day and the truth of that day."

Much (M.) Die Trugspielung orientalischer Kultur in den vorgeschichtlichen Zeitaltern Nordeuropas. (Mitt. d. Anthr. Ges. in Wien, 1906, XXXVI, 57–91, 11 fg.) Interesting study of the "mirage oriental" in relation to prehistoric northern European culture and the views of Sophus Müller. The relation of the Stone to the Bronze age, burial customs and grave-forms, stone and bronze axes, flint daggers, metal-use, etc., are discussed. Dr M. denies the theory of the preponderating and widespread influence, during the earlier and later Stone age, of Oriental culture on the material and intellectual development of Europe. This culture is rather of independent mold, embracing at first the southern, central, and northwestern parts of the

continent. The kitchen-midden people of Denmark, etc., spread from France along the North Sea coast.

Müller-Brauel (H.) Die Besiedelung der Gegend zwischen Elbe und Weser in vorgeschichtlicher Zeit. (Globus, Brnschwg., 1906, XC, 149-53, 2 fg.) Interesting discussion, based on author's extensive investigations of the prehistoric population of the Elbe-Weser region — particularly the Bremen-Verden country. Taking into account the number, etc., of stone-graves, sites of dwellings, flint "works," mound-graves, urn-cemeteries, etc., the conditions of land and water, M.-B. concludes that the same people dwelt in the region in all three periods (stone grave, mound grave, urn burial), that the population, in the last period especially, was nearly as dense as to-day, and that villages existed earlier than is generally thought.

Newcomer (C. R.) Maron: a mythological study. (Class. Philol., Chicago, 1907, II, 193-200.) Treats of the association of Apollo and Dionysus, as explaining the presence at the shrine of Ismarus of Maron, son of the wine-god and priest of Apollo. Dionysus came comparatively late into Greek religion, probably from Thrace.

Pearson (K.) On the relationship of intelligence to size and shape of head, and to other physical and mental characters. (Biometrika, Cambridge, 1906, V, 105-46, 6 fg.) Based on head-measurements of 1000 Cambridge graduates and registration statistics, and on the measurement and observation of more than 5000 school-children. Little association appears to exist between external physical and the psychical characters in man, at least in children. Hair-color is almost as closely associated with intelligence as length or breadth of head, eye-color more closely than height of head. Self-consciousness and noisiness are little, conscientiousness and athletic power highly correlated with intelligence. Handwriting and temper are more closely so correlated than anthropometric measurements. No substantial change of intelligence with age occurs. Sex-differences are noted in temper, shyness, self-consciousness, and their correlations.

Pessler (——.) Die geographischen Verbreitung des altsächsischen Bauernhauses in Pommern. (Globus, Brnschwg., 1906, 357-62, 10 fg., maps.) Treats of the occurrence of the Old Saxon peasant house in Pomerania, construction, geographical distribution, etc. The territory of the genuine Old Saxon house-type lies west of the Oder in regions settled or colonized by North Saxons, Rügen, New Pomerania, Westaltvorpommern, Oder islanders. East of the Oder it goes inland no farther than the limit of the Saxonoid coast dialect of Hinterpommern; west of the Oder it is coterminous with the pure blond type.

Piette (E.) Fibules pléistocènes. (Rev. préhist., Paris, 1906, I, extr., 1-15, 8 fg.) Treats in particular of two fragments of reindeer horn, one from the cave of St-Michel d'Arudy, the other from the cave of Gourdan, and of certain other horn objects, some of them possibly stoppers for skin vessels. The Gourdan object is remarkable as having graven upon it what seems the figure of an anthropoid (P. thinks "species filling the gap between man and the anthropomorphic apes" — the "missing link"). It was discovered in 1873. A similar find was made at Mas-d'Azil.

Rein (E.) Zu der Verehrung des Propheten Elias bei den Neugriechen. (Öfvers. Finska Vetensk.-Soc. Förhdlgr., Helsingfors, 1905, XLVII, 1-33.) Treats of the adoration of the Prophet Elias among the modern Greeks in relation to old heathen beliefs (the Helios-cult etc.), cults and cult-places, there are 70 *Hagios Ilias* localities in Greece. R. finds that the cult of Elias has, as a rule, not been shown to flourish at old cult-sites, nor has he taken the place of figures in ancient Greek mythology. Influence of the Slavic colonization (8th century) is noted, but this is not considered powerful.

—— Aiakos in der Unterwelt. (Acta Soc. Sci. Fenn., Helsingfors, 1906, XXXII, no. 7, 1-40.) Treats of Æacus as judge of the dead, as colleague of Pluto and keeper of the keys of the underworld, as gate-keeper of Hades. Dr R. considers the Æacus legend national Greek and that his transfer to Hades took place on Greek soil. The general question was discussed in Dr R's earlier work *De Æaco quæstiones mythologicæ* (Helsingfors, 1903).

—— Sagengeschichtliche Untersuchung über Aiakos. (Ibid., no. 8, 1-50). Treats the various legends of Æacus as culture-hero, etc.; the most famous legend is that of his saving Greece in time of famine. The most important legends

seem to have arisen in Ægina, or at least to have been given from there

de Robertis (R.) La psicologia dell'infanzia nell'uso dei verbi. (A. d. V. Congr. Int. di Psicol. Roma 1905, 1906, 678–91.) Treats of the use of verbs (tenses, voice, meanings, etc.) by Italian children up to the 12th and 13th years.

Reinach (S.) *"Ωρραι βιαιοθάνατοι.* (A. f. Religsw., Leipzig, 1906, IX, 312–22.) R. discusses the Vergilian passage (Æn. VI, 426 sqq.), concerning the presence in Hades of babes *ab ubere raptos*, and its analogues, and concludes that these infants were there by reason of a violent death through abortion. Vergil, as well as the Jewish-Egyptian author of the Apocalypse of Peter, drew upon an Orphic source, which has likewise inspired the teachings of Christianity; here is exemplified an instance of Greek folk-eschatology grafted on Hebrew cosmogony. R. holds that post-Evangelistic Christianity condemned suicide, abortion, and onanism, after borrowing pagan morals — echoes of prehistoric taboos.

Ryan (M. J.) The word Celt. (Cath. Univ. Bull., Wash., 1907, XIII, 94–134.) First part of a detailed discussion of the origin, etymology, various significations of the word *Celt* and derivatives, and citations of its use from works of Greek and Latin authors, glossaries, inscriptions, coins, etc., from the earliest times down to the middle of the 8th century A.D.

van Rynberk (G.) Quelques essais d'analyse psychologique de l'écolier basés sur les dessins. (A. d. V. Congr. Int. di Psicol. Roma 1905, 1906, 749–64, 7 fg.) Gives results of study of drawings of 1788 elementary school-children (aged 5–13) of Amsterdam. Dr v. R. concludes that children's drawings indicate artistic effort (even if embryonic); that they are not mere "graphic descriptions"; that fancy plays some rôle, but symbolism very little; that their chief drawings (of whatever race the children may be) have "a cosmopolitan uniformity"; that influence of environment is often marked; that sex differences are noticeable from the fifth year; that poor children produce more uniform series, with less individual variation; that (as to age) the children come to school as observers of detail and leave with a certain tendency to *observation d'ensemble*.

Sauer (B.) Oberhessische Dorfkirchen. (Hess. Bl. f. Volksk., Leipzig, 1906, V, 92–108, 2 pl.) Treats of the village churches of Upper Hessia, the Medieval and the later Protestant. The church as "citadel" and the interior development are discussed.

Saxen (R.) Språkliga bidrag till Den svenska bosättningens historia i Finland. I. Egentliga Finland, Satakunta och södra Österbotten. (Bidr. t. Kännedom af Finlands Natur och Folk, Helsingfors, 1905, 1–311.) This first part of a valuable monograph on the names of Swedish settlements in Finland, treats of Finland proper, Satakunta and south East-Bothnia. The index contains some 2000 names (Swedish and Finnish).

Schmidt (H.) Ostpreussische Beiträge. (Z. f. Ethn., Berlin, 1906, XXXVIII, 456–84, 25 fg.) Treats of a series of finds (the fibulæ and other ornaments and votive gifts are considered in detail) from the cemetery of Mingfen in East Prussia — numerous clay urns, partly with cremation and votive gifts of bronze and iron, bead ornaments, etc. At Mingfen, the second and third Masurian periods, corresponding to the Roman imperial epoch and the age of the folk-wandering, are represented. A bronze cross-bow fibula with thin head-plate is unique; also a bull-fibula. One of the urns ("window urns") has a hole broken out in the lower part — this may be the "soul hole" found elsewhere in the world. S. thinks that part of the culture here represented is native, par-exotic, from the south; the Black Sea region served to influence both the Baltic and the Adriatic, and the last influenced the Baltic culture.

Schmolck (—) Mehrfacher Zwergwuchs in verwandten Familien eines Hochgebirgtales. (Virchow's Arch. f. path. Anat., Berlin, 1906, XVIII S., VII, 105–11, 4 fg.) Calls attention to and describes cases of dwarfs (4 male, 3 female) among the descendants of two individuals (completely normal mentally and physically), brother and sister, belonging to the Saumnaun valley (Inn valley), half in the Tirol and half in Switzerland. The six villages (1500–1900 m. above sea-level) of the locality count only 356 souls. These dwarfs seem mentally normal and to possess no marked physical defects. They are "real dwarfs."

Segerstedt (T.) Den heliga eken.

(Ymer, Stckhlm., 1906, XXVI, 341-6.) Résumé of a monograph on *Ekguden i Dodona*, published in the *Lunds Univ. Årskr.*, N. F., Afd. I, Bd. I. Treats of the "holy oak" in the religions and mythologies, etc., of the various European peoples, with special reference to Dodona and its cults.

Stefánsson (V.) Icelandic beast and bird lore. (J. Amer. Folk-lore, Boston, 1906, XIX, 300-8.) Treats of folk-lore relating to creatures real and imaginary: *Nykur* or fresh-water horse, polar bear (a man under the spell of sorcery), cattle (talk for an hour on Twelfth Night), foxes, rooster (lays eggs), eagle (dragon sometimes produced from egg), raven (how many-sided wisdom), etc. Fewer stories are known of birds than beasts.

Tetzner (F.) Zur Volkskunde der Bulgaren in Ungarn. (Globus Brnschwg., 1906, XC, 138-42, 7 fg.) Treats of the people of the Bulgarian "language-islands" of Old-Beschenova, Vinga, etc., in the Temes-Torontal region, south of the Maros and east of the Theiss. Clothing and ornament, houses and utensils, weddings, and funerals, religious festivals, language, etc., are briefly discussed.

Thomas (A.) Orthia. (A. f. Religsw., Leipzig, 1906, IX, 397-416.) Treats of nature and origin of the cult of Orthia (Artemis Orthia was originally simply Orthia), a noted feature of which was the *diamastignosis* (cf. the *boguera* or initiatory scourging of Bechuana youth). Orthia was an old Spartan local deity; her tree was the lygos; she was really a tree-goddess, afterward absorbed by Artemis; her cult included tree-worship with scourging, which belongs not with reduced human sacrifice, but with performances of a sort akin to the "striking with the rod of life," etc. Orthia goes with the "tree of life.'

Thomas (N. W.) The scape-goat in European folk-lore. (Folk-Lore, Lond., 1906, XVII, 258-87.) Treats of the Dutch "Katuit" (last day of Kirmess), hunting the wren (France, Scotland), the West German "Jänseoar," the German "Sommervogel," the French (Limousin). "Roi de la Tire-vessie," the Welsh *meogiad* (on Shrove Tuesday), Welsh plague-sacrifice and kindred customs, Bohemian cat-killing (on Christmas eve), North German gosling-catching, throwing at cocks, etc., *bachelette* and like customs (France), South German pig-rolling, German (and elsewhere) *Brauthahn*, and related rites and customs. The "wide prevalence of cathartic ceremonies in Europe" is shown and "the immense importance of the idea of the expulsion of evils in all parts of the world" indicated.

Waldeyer (W.) Bemalte Ostereier aus Krakau. (Z. f. Ethn., Berlin, 1906, XXXVIII, 750-1.) Note on painted Easter eggs from Cracow, a large collection of which is in the Museum of that city.

Woods (F. A.) The non-inheritance of sex in man. (Biometrika, Cambridge, 1906, V, 73-8.) Based on data in Dr K. v. Behr's *Genealogie der in Europa regierenden Fürstenhäuser* (1870) and Burke's *Peerage and Baronetage* (1895). The conclusion is that neither the soma of the father nor the soma of the mother has any influence, at least in man, in the determination of sex; nor is the proportionate distribution of sex in any degree subject to hereditary influence. Mendelian principles, probably, do not control the determination of sex in man. See: *Heron* (D.).

Wünsch (R.) Was sich das griechische Volk erzählt. (Hess. Bl. f. Volksk., Leipzig, 1906, V, 108-24.) Critical review of the recent (1904) work of N. G. Politis on the oral *Paradoseis* (of which P. gives the text of more than 1000, with comparative and historical notes, etc.), indicating the chief features of modern Greek folk-lore. Most widespread are tales of supernatural beings, spirits, specters — much taken over from ancient times, both in motives and in personalities. The Turkish epoch is the only historical period really borne in the Greek mind.

AFRICA

Ankermann (B.) L'ethnographie actuelle de l'Afrique méridionale. (Anthropos, Salzburg, 1906, I, 914-49, 2 maps.) Second section. See *American Anthropologist*, 1906, IX, 217.

Bazin (H.) Les Bambara et leur langue. (Ibid., 681-94.) Notes on the Bambara or Bamana, the most important branch of the Mandé in French West Africa. Physical characters (negroes and not *métis*), clothing and ornament (Musulman influence), village-life, agriculture, social organization, religious ideas (fetishes, animal-sacrifice, totemism; festivals; circumcision and incision), dances and musical instruments, etc., are briefly

treated, and the chief features of the language (no declension or conjugation proper; all concrete words susceptible of abstract form; primitive radicals relatively few; multiplicity of homonyms; many foreign loan-words; decimal notation; "black" writing) outlined.

Chamberlain (A. F.) The negro question in Africa and America. (Voice, Chicago, 1907, IV, 104–8.) Outlines the development of the negro in *seclusion* in Africa, as compared with that of the white race in the heavily-bonused Mediterranean area. The negro question in Africa is an African one and must be settled in accord with African genius; the negro question in America is an American one and must be settled in the spirit of American democracy — the negro is destined to be an American.

Damoglou (*Dr*) La timidité en Orient. (R. de l'Hypn., Paris, 1906–07, XXI, 210–11.) Notes on fear of old people, pater familias, teachers, on the part even of grown-up men. Timidity "is an endemic disease, very ancient and hereditary" in the Orient.

Forschungen über die Hyksos. (Globus, Brnschwg., 1906, XC, 130–1.) Résumés the article of Petrie in *Man* for Aug., 1906.

Frobenius (L.) Bericht über die völkerkundlichen Forschungen vom 30 Mai bis 2 Dezember, 1905. (Z. f. Ethn., Berlin, 1906, XXXVIII, 736–41.) Brief account of author's ethnological researches — notes on the Bashensi, Babunda, Baluba, Bashoa (Pigmies), Bapende, Kioque. Of these the first two are genuine old Negro peoples; the Kioque represent a new migration. The Babunda are sculptors and weavers; the Baluba poets and story tellers. About 300 tales have been collected; full of wit and humor; rich animal tales; parables, etc. These rich mental products are "born of totemism."

Hartland (E. S.) Travel notes in South Africa. (Folk-Lore, Lond., 1906, XVII, 472–87, 7 pl., 2 fg.) Treats of a Zulu wedding witnessed by the author in Natal; a visit to Chief Laduma's kraal; the Shangaans (a Thonga people); visit to a Manyika kraal near Umtali. Interesting sociological notes.

Hassert (K.) Ein Herbstausflug nach Eritrea, Italienisch-Afrika. (Globus, Brnschwg., 1906, XC, 197–205, 213–20, 11 fg.) Account of visit in the fall of 1905 to Erithrea, the Italian possessions in N. E. Africa. Contains some notes on the natives, the towns of Asmara, Saganeiti, Massana, etc.

Hutter (–) Die wissenschaftlichen Ergebnisse der Expedition Foureau-Lamy 1898–1900. (Ibid., 362–7, 380–3.) Pages 382–3 treat of prehistory and ethnography. Foureau recognizes 11 prehistoric regions, of which the fifth (Erg) yielded the most important remains (painted ostrich eggs, beads, etc.). The northern Tuareg have not a little negro blood; also the Tuareg of Air. Interesting is Foureau's statement that "the fanaticism and religious superstitions of the so-called higher races exceed anything of the sort encountered among so-called savages." The details of Foureau's investigations are to be found in his *D'Alger au Congo* (3 v., Paris, 1900–05).

Krämer (A.) Die Forschungsreise S. M. S. "Planet." (Ibid., 101–4.) Contains a few ethnological notes. K. obtained from the Cape Verde is. (immigrant Mandingos!) a collection of calabashes and wooden snuff-boxes; from Madagascar a collection of native musical instruments, a loom, etc. He notes the pleasing faces of the Hindustanee girls on Gadu.

v. Luschan (F.) Ueber sechs Pygmäen vom Ituri. (Z. f. Ethn., Berlin, 1906, XXXVIII, 716-30, 2 fg.) Treats, with anthropometric data, of 6 pigmies (4 men, 2 women) from the Ituri country — physical characters, bows and arrows, personal names, numerals, etc. Of the men one is not a pure-blood pigmy, but the others are typical representatives. These pigmies were exhibited before the Anthropological Society by courtesy of the Passage Panopticum. They had been measured previously in Cairo by G. E. Elliott Smith, whose observations were published in the *Lancet* for Aug. 12, 1905. Some interesting data as to the rate of growth of pigmies are thus presented. See: *Meinhof* (*C.*).

Martrou (L.) Les "eki" des Fang. (Anthropos, Salzburg, 1906, I, 745–61.) The author, 10 years among the Fang or Pahouins of the Ogowé, in French Congo, treats with some detail of the *eki* (prohibited act or food) prevalent with this rather primitive people. There are *ekis* for people suffering from certain diseases (particularly syphilitic and venereal), for people in certain ages, ranks, social conditions, etc. (children,

youths, women, twins), moral *ekis* (marriage and conjugal taboos), totemic *ekis*, *ekis* imposed by shamans, in dreams, by the father who possesses an *evus* (an animal said to live in the entrails of men and beasts), etc. Severe punishments afflict the violator of an *eki*. Food *ekis* may be remitted in time of famine by means of certain ritual ceremonies. A slow degradation of *ekis* has resulted from contact with civilization, etc. The *ekis* are the bonds which limit the freedom of these Negro tribes.

Meinhof (C.) Untersuchung der Pygmäensprache. (Z. f. Ethn., Berlin, 1906, XXXVIII, 730–1.) Brief notes on the language of the Pigmies. Their speech contains velar labials and is rich in musical tone, resembling in both respects the tongues of Lower Guinea, e. g., the Ewe. M. considers the Pigmy language "isolating." Foreign loanwords appear even in the numerals (5 and 10 are Bantu). See: *v. Luschan* (*F.*)

Müller (A.) Wahrsagerei bei den Kaffern. (Anthropos, Salzburg, 1906, I, 762–78, 5 pl.) First part of an interesting and valuable account (with photographs of "fortune-tellers," their costume, actions, etc.) of "fortune-telling" among the Kaffirs. The method of preparation (experience of an old woman "prophet"), various ways of exercising the art (carting stones, sticks, etc.; clever questioning; consulting spirits; use of crystals, mantis religiosa, etc.) are discussed in some detail.

Müller (F.) Ein Beitrag zur Kenntnis der Akasele (Tšambá)-Sprache. (Ibid., 787–803.) Grammatical sketch (phonetics, classes of nouns, pronouns, adjectives, numerals, prepositions and postpositions, verbs, adverbs) of the Akasale of Tšambá, a city of Togoland. The Akasele language is dying out; it is closely related to Basari, the differences being little more than dialectal.

Rosen (—). Photographien aus Abessynien. (Z. f. Ethn., Berlin, 1906, XXXVIII, 800–2.) Notes on photographs of the country, its people, etc. Harar still Arabic in many things. Gondar is the Heidelberg of Abyssinia; it has buildings of Portuguese origin. Erythrea abounds in signs of European culture.

Sayce (A. H.) Cairene folk-lore. III. (Folk-Lore, Lond., 1906, XVII, 191–200.) Cites 17 brief stories. Also miscellaneous items about marriage, luck and ill-luck, "human crocodiles," tree-cult, offerings to the Sheik Isa (*i. e.*, Jesus), etc. Near Dirr in Nubia is a niche in a rock-tomb in which offerings have been made from the time of pagan Nubia. In the 12th century Jesus was transformed into a Mohammedan saint.

Schweinfurth (G.) Reste des Quartärmenschen von Nordafrika. (Z. f. Ethn., Berlin, 1906, XXXVIII, 733–6.) Discusses the recent discovery of remains (human bones, flints of paleo-neolithic transitional types, snail-shells, fragments of ostrich-shells, etc.) of Quaternary man, in a phosphate quarry on the mountain slope north of Metlani, east of Gafsa, Tunis, and of other remains found in caves of the same region, probably of the later paleolithic age. The presence of ostrich-shells seems to indicate a dry period in northern Africa at this epoch.

Sjöstedt (Y.) Kilimandjaro-expeditionens allmänna gång och resultat. (Ymer, Stckhm., 1906, XXVI, 363–82, 9 fg.) Treats of the Swedish Kilimandjaro expedition of 1906 and its results. Contains some notes on the Wadjaggas, a Bantu people.

Struck (B.) Taufceremonie der Gã. (Globus, Brnschwg., 1906, XC, 385.) Brief account of the baptismal ceremony of the Gã negroes of the Gold Coast, more in detail than that of Vortisch (q. v.).

Vortisch (H.) Die Neger der Goldküste. (Ibid., 233–7, 249–53, 33 fg.) Third and fourth sections of article. Treats of houses and "temples," industrial art, work in wood, brass, iron, gold, etc. Noteworthy are the kings' swords, wooden fetishes and dolls, clay images, arabesque-like bas-reliefs, grave, monuments, gold-wrights and ornaments of gold and silver, wood-carving, weaving, pottery (its manufacture is known to everybody). V. thinks the doll-figures rarely serve children as playthings, but are rather idols. The boys play "king" with wooden imitations of the kings' swords.

Wilder (G. A.) The Ndau religion. (Hartf. Sem. Rec., 1907, XVII, 52–7, 159–68.) Treats of lunar celebration, (moonlight dances, monthly days of rest), beliefs and practices concerning ultra-human spirits (*Mwari*, an invisible great spirit, creator and preserver of men; *Musikubvanthu*, preserver of mankind, rain-spirit, "maker of man by rubbing two sticks together (as in fire-making)," everyday religion (spirit-lore, funeral

ceremonies, introducing spirits into the child, — performed by mother), birth rites, Thanksgiving, harvest festival (a national celebration), propitiatory sacrifices to family and foreign spirits, sacred beer drink and dance, sacrifices to the *penjii* or spirits of the foolish, etc. The Ndau are a primitive Bantu people of east central Africa, numbering some 400,000.

Zürn (R.) Heimstätten in Deutsch-Südwestafrika. (Globus, Brnschwg., 1906, XC, 153-7, 3 fg.) Treats of "small-farming" in the Osona region of German Southwest Africa.

ASIA

Ali (*Ameer*) Afghanistan and its ruler. (Ninet. Cent., Lond., 1907, 42-51.) Treats of recent and present history. A. holds that "even in Afghanistan the people and their leaders are prepared for political development," the idea being "a strong Afghan kingdom united by intimate ties with British India." Sending Afghan youth to be educated in England and British India is advocated.

Arnaiz (F. G.) Los indígenas de la Prefectura de Chiang chiu (Amoy), China. (Anthropos Salzburg, 1906, I, 779-86.) First part, geographical and statistical, of an account of the modern natives of the prefecture of Chiang-chiu, in the southern part of the province of Fu-kien, China. The primitive inhabitants of this region were the so-called *Man-ming* or *Min-ming*.

Casartelli (L. C.) Hindu mythology and literature as recorded by Portuguese missionaries of the early 17th century. (Anthropos, Salzburg, 1906, I, 864-76.) Gives in English chapters 1-8 of "A brief account of the scriptures of the infidels of the East Indies, and of their customs" (Portuguese documents *ca* 1600). The same has already appeared in the *Babylonian and Oriental Record* for 1900-01.

Chinesische (Die) Teeindustrie. (Globus, Brnschwg., 1906, 160-1.) Treats of production, preparation, etc., of tea in China. Based on the article of J. Hardy and C. Lenormand in *A travers le Monde*, 1906, 177-9.

Gil (S.) Fábulas y refranas anamitas. (Anthropos, Salzburg, 1906, I, 824-37). Second section of monograph on Anamese tales and proverbs (no. 20-60). The native and Spanish text of the "Story of Cuoi" is given as illustrating the Anamese "propensity to lie"—*Annamitici sine mendatiis nihil facere sciunt.* G. attributes this mendacity to bad education and arbitrary government.

Gille (A.) Notes on some native medicines from southern India. (Man, Lond., 1906, 182-7.) Enumerates many remedies (vegetal chiefly) for bile, boils, bruises, chest disease, consumption, coughing, dog bite, dysentery, eye diseases, fever (the rajah of all diseases), headache, indigestion, insanity, purples, rheumatism (80 different kinds, including leprosy, recognized), skin diseases, smallpox (18 varieties produced by as many evil spirits), stomach-ache, vomiting, worms. Brahma sent a disease for each sin as punishment. Medicine was taught by the demigods to the "holy sages."

Goldziher (I.) Die Bedeutung der Nachmittagszeit im Islam. (A. f. Religsw., Leipzig, 1906, IX, 293-302.) Treats of the significance of "afternoon" in Mohammedan religion — name and cognate terms, special sanctity, rites and ceremonies connected therewith, traditions and folk-lore (God judges men at the time of afternoon prayer, etc.).

Guesdon (J.) Réach Kol. Analyse et critique du poème Khmêr. (Anthropos, Salzburg, 1906, I, 804-17, 4 pl.) Résumés and criticises the Khmer poem *Réach Kol*, a *satra* in 8 vols based on old Pali texts. The legend of *Réach Kol* has long been popular, especially in northern Cambodia. The theme is a common one in the Buddhistic *satras*.

Koganei (Y.) Ueber Schädel und Skelette der Koreaner. (Z. f. Ethn., Berlin, 1906, XXXVIII, 513-35.) Treats, with details of measurement, description, etc., of 23 skulls (male 12, female 5, youth 3, children 3) from various provinces of Korea, and 2 female and 1 (incomplete) male skeletons. Of the skulls 11 are mesocephalic and 7 brachycephalic (range 72.3 to 93.7); the capacity of the male skulls ranges from 1330 to 1600 ccm., of the female from 1260 to 1370 ccm.

Maurer (F.) Das Tabu im Alten Testament. (Globus, Brnschwg., 1906, XC, 136-7.) Cites instance of taboos of plants, animals, man, etc., in the Old Testament. Also the *Jahvetaboo* which ultimately became a burden to the people. The Jahvetaboo is genuinely Israelitic.

Müller (F. W. K.) Pygmäensage in Japan. (Z. f. Ethn., Berlin, 1906, XXXVIII, 750, 1 fg.) Cites from the Japanese edition

(1713 A. D.) of the Chinese Orbis pictus, *San-tsai tu-hui*, a passage to prove that the old classic legend of the enmity between the Pigmies and the cranes had reached the land of the Mikado.

—— Journal of the Anthropological Society of Tōkyō. (Ibid., 711–15). Lists titles of articles in vol. XXI, 1905-06, and résumés briefly contents of the number for Oct., 1905, particularly the article of Ino on fire-making among the aborigines of Formosa. The remarkable clay *Hannia*-figure found in the Japanese province of Mushashi is also described.

Nachod (O.) Ueber einen japanischen Studenten der Universität Leiden im Jahre 1669. (Ibid., 709–11.) Calls attention to "Petrus Hartsingius Japonensis," a student, *honoris causa*, in medicine.

Opium in China. (Globus, Brnschwg., 1906, XC, 351–2.) Treats of production, use, etc. Résumés article by Hardy and Lenormand in *A travers le Monde* for Oct. 27, 1906.

Paton (L. B.) Jerusalem in Bible times. (Bibl. World, Chicago, 1907, XXIX, 7–22, 86–96, 12 fg.) Treats of the location of the temple and the valleys of ancient Jerusalem. The Haram area as the temple site — this is "the only point in the topography of ancient Jerusalem in regard to which there is universal agreement."

Singh (J.) The education of Indian princes. (Ninet. Cent., Lond., 1907, 52–5.) Advocates sending them to Europe "as early as possible before the age of puberty," and to America as well "to acquire the best knowledge that Western art and science can teach."

Stenz (G. M.) Der Bauer in Schantung. (Anthropos, Salzburg, 1906, I, 838-63, 11 pl.) Second portion of monograph on the peasants of Shan-tung. Treats of food, clothing, occupations, etc.; horticulture, gardening (almost idyllic life of gardener in summer), cultivation of the soil (manuring, plowing and harrowing, sowing, etc.). Also "rules," proverbs (list of 32 in Chinese and German) and items of superstition. The last topic is treated more in detail in S.'s recent work *Volksgebräuche im westl. Schantung während des Jahres.*

Tallqvist (K. L.) Neubabylonisches Namenbuch zu den Geschäftsurkunden aus der Zeit des Šamaššumukîn bis Xerxes. (Acta Soc. Scient. Fenn., Helsingf., 1906, XXXII, no. 2, i–xlii, 1–338.) Dictionary, in double columns, of names of persons, deities, countries and places, temples, canals and rivers, streets, gates, etc., mentioned in Babylonian business documents from the time of Šamaššumukîn to that of Xerxes, with general introduction on the nature and significance of these names, methods of composition, modification, etc. A valuable monograph.

ten Kate (H.) Aus dem japanischen Volksglauben. (Globus, Brnschwg., 1906, XC, 111–14, 126–30.) A valuable and interesting collection of items of Japanese folk-lore relating to "magic," protective medicine, prophecy, dreams, astrology, luck, mythology, folk-medicine, cosmetics, etc.; the result of Dr ten Kate's own investigations and observations. The folk-lore here considered is widespread among the lower social classes, especially peasants and fishermen. Upon the Japanese, however, superstitions have no oppressive weight.

Wright (A. R.) Tree-worship in China. (Folk-Lore, Lond., 1906, XVII. 190, 1 pl.) Describes, after Rev. J. Hinds, a tree (*Sophora Japonica*) in the city of Jung-ping-fu, with altar for incense offering, etc.

INDONESIA, AUSTRALASIA, POLYNESIA

Abel (P.) Knabenspiele auf Neu-Mecklenburg, Südsee. (Anthropos, Salzburg, 1906, I, 818–23.) First part of an account of boys' games among the natives of the island of New Mecklenburg, describing, with text and music of song, the *a kapkap-bén*, or "mat-holding," a group game.

Fehlinger (H.) Die Bevölkerung der Philippineninseln. (Globus, Brnschwg., 1906, XC, 142–5.) Treats of the civilized and uncivilized peoples of the Philippines. Based on U. S. Census (1903), Barrows' historical monograph, etc.

Fischer (H. W.) Mitteilungen über die Nias-Sammlung des Ethnographischen Reichsmuseums zu Leiden. (Int. Arch. f. Ethnogr., Leiden, 1906, XVIII, 85–94, 1 pl., 17 fg.) Gives account of the collection of 400 specimens (wood-carving, drawing, clothing and ornament; household utensils; weapons; amulets, etc.) from the island of Nias, in the Museum at Leiden. Included in the collection are the preserved head of a native of Nias and a guttapercha mask of a living person.

van Gennep (A.) Dessins sur peaux d'opossum australiennes. (R. Ethn. Mus. Leiden, Versl., 1905-06, 'sGravenhage, 1907, 66-72, 14 pl.) Brief account of drawings or marks in red on 62 opossum skins in the Leiden Museum. The marks are of various classes: branched cross, closed meanders, rhombi or boomerangs (resembling the *churinga* of the West Australians), animals and human figures, etc. They are not so much "property marks" as rudiments of a special ornamental art. They may be compared with the rock-paintings of the country.

—— Les marques de propriété chez les indigènes de l'Australie. (R. d. Trad. Pop., Paris, 1906, 113-22.) Treats of property marks (on wild bee-hives; territorial property marks, natural, not artificial; on arms, tools, etc.) among the native Australians. Temporary marks are widespread in Queensland, etc. Property marks are probably more common in Australia than is yet recorded to be the case.

—— Réponse à M. Lang. (Man, Lond., 1906, 148-9.) Treats of the sociology and totemism of Australian aborigines, views of Howitt, Frazer, et al.

Gardner (F.) Philippine (Tagalog) superstitions. (J. Am. Folk-Lore, Boston, 1906, XIX, 191-204.) Treats of ancient superstitions (from Ortiz's work published in 1713), the *asuang* (9 brief tales), the *tik-balan* (4 brief tales), *tianak*, etc. The *asuang* superstition "is believed alike by Christian and non-Christian, by educated and ignorant, almost without exception." The *asuang* of the Tagalogs is the *wakwak* of the Visayans. The *tianak* is a cognate "goblin." The *tik-balan* is a forest-monster, and akin to it is the *oko*. The *kapre* is a benign monster.

—— Filipino (Tagalog) versions of Cinderella. (Ibid., 265-72.) Gives English translations of two Tagalog Cinderella-stories, apparently unprinted so far as known. See: *Newell* (*W. W.*).

Graebner (F.) Wanderung und Entwickelung sozialer Systeme in Australien. (Globus, Brnschwg, 1906, XC, 181-6, 207-10, 220-4, 237-41, 14 fg., map.) In this well-documented study G. discusses the social organization of the Australian aborigines in relation to migrations, art, etc. The inland and coast types of culture differ very much, and "the territory of the pure, maternal two-class systems is also that of the inland style-type." The contrast of systems, styles, material culture, etc., indicates not the development of one system from the other, but the mutual interference of two opposing systems (the maternal two-class, the paternal local), the former of which has been intrusive — the paths of influence are the river-courses.

Howitt (A. W.) The native tribes of Southeast Australia. (Folk-Lore, Lond., 1906, XVII, 174-89. Reply to and criticism of views of A. Lang in previous volume. Discusses the "All-Father" belief, group-marriage, terms of relationship, etc. H. says that Lang's explanations of the origin and meaning of the Australian terms of relationship "are merely guesses, without the support of any direct evidence." He also holds that "starting, for instance with the Dieri, a series of progressive tribes may be indicated, ending for instance with the Kurnai, the Yuin or the Chepara."

Klaatsch (H.) Reisebericht aus Soerabaya vom 1. Mai, 1906. (Z. f. Ethn., Berlin, 1906, XXXVIII, 764-800, 4 fg.) Gives account of travels and investigations of author in Java and Australia 1905-06. From Java K. obtained anatomical and archeological specimens, visited Trinil, where the *Pithecanthropus* was discovered (no artificially worked objects were found). Mixture of Hindu blood in Djokjakarta and Soerakurta (central Java) is noted; also the rather "embryonal" face type of many adult Javanese women. The primitive Australian, according to K., has close relations with the Javanese-Malayan in face-type. The *wajangs* (puppet shows) with their masks and artificial alterations of facial traits are of ethnologic importance. Stone axes are known to the modern Javanese as *gigi-goentoer* ('thunder-teeth'). Cave exploration gave negative results. The wild dog of Java is of interest for the *dingo* problem. The question of a primitive negroid element in Java is disturbed by the fact that the Dutch introduced whole regiments of African negroes who mixed with the natives. In Australia K. inspected the site of the famous footprints of Warnambool, whose human origin he rather favors. He visited also the Niol-Niol tribe on Beagle bay, and discusses the *churinga* question. He sees signs of weakening, etc., of old customs long before the coming of the whites.

Lang (A.) Questiones totemicæ: a reply to M. van Gennep. (Man, Lond., 1906, 180–2.) Treats of nescience of the physical facts of procreation, incarnation of spirits, avoidance, totemism, etc., of Australian aborigines. L. maintains that v. G. has "bestowed cavalier usage on Mr. Atkinson's work."

Loria (L.) Appunti di Psicologia Papuana (Punta S. E.) della Nuova Guinea Brittannica. (A. d. V. Congr. Int. di Psicol. Roma 1905, 1906, 716–32, 3 fg.) Treats of the psychology of the Papuan. Excitability (extreme), timidity (characteristic), feeling of love (unknown — no words for love; but this is too dogmatic), pain and pleasure, family life (sexuality and obscenity marked in speech), menstruation in women attributed to the moon-man, wooing and marriage, abortion, infanticide, twins, indolence, disingenuousness, great superstitiousness and marked credulity, vanity (expressed in tattooing), etc. The author seems to have passed rather harsh judgment on these aborigines of British New Guinea.

Maass (A.) Die primitive Kunst der Mentawei-Insulaner. (Z. f. Ethn., Berlin, 1906, XXXVIII, 435–55, 3 pl., 32 fg.) Treats of the primitive art of the Mentawei islanders (west coast of Sumatra): Color sense (4 chief colors, white, red, yellow, and black; finer shades unknown; comparison with the child), body-painting and tattooing (after puberty a matter of individual taste); ornament (flowers, shell-beads, etc., metal rings, etc.), decorative art (linear figures characteristic), dolls (made of sago-palm leaf-stem), toy boats, toy windmill (of cocoanut leaf), ornamentation of dagger-handles and other weapons (Malay influence), combs, animal carvings on doors and other wooden objects (in flat relief) and imitations in wax, etc. The principal beams of the chief's house exhibit the acme of Mentawei decorative art. Pages 451–4 treat of drawings of men (including the author), animals and other objects, the good and the evil spirit, etc. M. regards body-painting as the primal decorative art.

Mathews (R. H.) Notes on some native tribes of Australia. (J. and Proc. R. Soc. N. S. W., Sydney, 1906, XL, 95–129.) Treats of the sociology of the Kurnu tribe (the only invariable law is that "the cycles, sections, totems, bloods and shades, are irrevocably transmitted through the mothers"; all existing things, except the turtle, the mussel, and the crayfish, are related to each other as are people), sharing game and other food, sociology of the Chau-an tribe (new information), languages of tribes about Alice Springs, native shoes (of tea-tree bark) in the Northern Territory, naming (e. g., after its negative adverb) of some native languages, *gure* or avenging party, etc., superstition concerning Magellanic clouds.

Millington (W. H.) *and* **Maxfield** (B. L.) Philippine (Visayan) superstitions. (J. Amer. Folk-Lore, Boston, 1906, XIX, 205–11.) Treats of good and evil spirits (tomawos, dwendes, asuangs); two tamawo stories; story of an asuang; miscellaneous items of superstition ("those in the towns laugh at the superstitions," but almost everybody believes some of them).

Myers (C.) The rhythm-sense of primitive peoples. (A. d. V. Congr. Int. di Psicol. Roma 1905, 1906, 287–9.) Gives results of experiments (Morse key tapping) on 14 Murray islanders (Torres sts.) and some Sarawak Malays of Borneo. Most of the Murray islanders quicken the prescribed rate both in the slow and quick rhythms; the special tendency of the English is to slow in the slow rhythms. The Sarawak Malay method of beating the *tetáwak* (very large gong) "shows how elaborately the execution and the perception of complex rhythmical variations may be developed among uncivilized peoples."

Newell (W. W.) Comparative note. (J. Amer. Folk-Lore, Boston, 1900, XIX, 272–9.) Comparative study of the Cinderella stories reported from the Philippines by F. Gardner (q. v.). An interesting Spanish tale (Maria la Cenicienta) from Chile is cited. The Tagalog story has evidently come in through Spanish occupancy.

Senfft (A.) Die Bewohner der Westkarolinen. (Globus, Brnschwg., 1906, XC, 279–83, 10 fg.) Brief, but well-illustrated account of the natives of the western Caroline islands — types of Yap, Pelew, Ululsi and Oleai, Merir and Sonsol, and Tobi types are indicated — the last owes several peculiarities to the isolation of the island. The people of Yap make a more pleasing impression than those of Pelew.

Woodford (C. W.) Some account of Sikiana or Stewart's island in the British

Solomon Islands protectorate. (Man, Lond., 1906, 164–5, 2 fg.) Treats briefly of history and discovery, genealogy and migration, legend, contact with natives of other islands, tattooing, language (vocabulary of 70 words including chief numerals). The natives are "almost pure Polynesians, but with a slight admixture of the Micronesian element." The latter is due to the refugees from Kuria, who were brought to Sikaiana, rather more than a generation ago in an American whaler.

AMERICA

Adam (L.) Le Caraïbe du Honduras et le Caraïbe des Isles. (Intern. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 357–71.) Treats of the Carib language of Honduras and that of the Antilles. Lists of French loan-words (about 100, *accuser-voyage*) in the Carib of St Vincent, Spanish loan-words (23, *aguja-zapato*) and English loan-words (5) in the Carib of Honduras are given and the phonetic phenomena represented by them discussed. The Stann-Creek dialect of Honduras is essentially the same as that of St Vincent, etc.

Andree (R.) Der Ursprung amerikanischen Kulturen. Ein Ueberblick. (Stzgb. d. Anthr. Ges. in Wien, 1906, 87–98.) Discusses various theories and arguments as to the origin of the native civilizations of America. R. supports the view that the American race and American culture are autochthonous, the differentiation from other races having already existed in prehistoric times. Among the topics considered are: Alleged pre-Columbian visits and colonizations, Fu-sang, analogies, parallels, and convergences in customs and habits, religion, arts, implements, games, mythology, and folk-lore.

Belden (H. M.) Old-country ballads in Missouri. (J. Amer. Folk-Lore, Boston, 1906, XIX, 231–40, 281–99.) Publishes "part of a collection made during the past three years by students of the University of Missouri": The pretty golden queen, The old man in the North country, Old Bangum and the boar, Lord Thomas, The brown girl, Sweet William and Lady Margaret, Lord Lovel and Lady Nancy, Lady Nancy Bell, Barbara Allen, The Jew's Garden, Black Jack Daley, The house carpenter, A woman and the devil.

Bourne (E. G.) Columbus, Ramon Pane and the beginnings of American anthropology. (Proc. Amer. Antiq. Soc., Worcester, 1906, N. S., XVII, 310–348.) Translates, with valuable historical and interpretative notes, from the original Italian text, Friar Ramon Pane's treatise on the antiquities of the Indians, comparing it with the epitomes of Peter Martyr and Las Casas. The treatise is noteworthy as containing a number of legends and other ethnological data. Many interesting aboriginal names (some, apparently, quite distorted) are given by Ramon. To the "list of modern works dealing directly with the Treatise of Ramon Pane," etc., should be added the late Dr D. G. Brinton's *The Arawack Language of Guiana* (Phila., 1871). Prof. B. considers the legend of the culture-hero Guahagiona and his sores "conclusive evidence that syphilis had existed in the West Indies long before the arrival of the Spaniards." Another passage proves the indigenous origin of Amazon legends in America. See also *American Anthropologist*, 1907, IX, 203.

Breton (Adela) Some notes on Xochicalco. (Trans. Dep. Archæol. Free Mus. Sci. and Art Univ. of Penn., Phila., 1906, II, 51–67, 6 pl., 13 fg.) Discusses the ruins (mounds, terraces, low sculptured buildings of Xochicalco and compares them with those of Tepoztlan and Chicchen Itza. The figures and motives of the sculptures (serpent, feathers, flame, stream of water, chiefs, armed warrior, etc.) are considered. This is an important ruin.

Breton (A. C.) Ancient bronze in South America. (Man, Lond., 1906, 161–4, 1 pl., 6 fg.) Résumés data in Ambrosetti's monograph *El bronce en la región Calchaquí* (Buenos Aires, 1904).

Brewster (S. W.) Rev. Father Paul M. Ponziglione. (Trans. Kans. State Hist. Soc., Topeka, 1906, IX, 19–32, 2 fg.) Account of life and labors of Father P., from 1851 to 1889, missionary among the Osage Indians, etc.

Bushnell (D. I., Jr) The use of buffalo-hair by the North American Indians. (Man, Lond., 1906, 177–80, 1 pl., 3 fg.) Describes buffalo hair bags in the Pitt-Rivers Museum (Oxford) and British Museum, also belts, etc. The hair or wool of the buffalo was utilized by the Indians of the greater part of the United States, etc., for making bags, blankets, belts, garters, etc. In the 18th century

its use is reported from the Carolinian tribes, the Illinois, tribes of the west, etc. Specimens are now very rare.

Carter (O. C. S.) Acoma: the cliff city of New Mexico. (J. Franklin Inst., Phila., 1906, 449–65, 8 fg.) General description, topography, etc., historical, Coronado, etc. Prof C. visited Acoma in summer.

Chamberlain (A. F.) Cree and Ojibwa literary terms. (J. Am. Folk-Lore, Boston, 1906, XIX, 346–7.) Cites, with explanations, terms for 'story,' 'story-telling,' 'tale,' 'fable,' 'parable,' 'once upon a time,' etc., from Lacombe, Baraga, Cuoq, et al.

Chappell (P. E.) A history of the Missouri river. (Trans. Kans. State Hist. Soc., Topeka, 1906, IX, 237–316, 4 fg.) Contains some notes of the Indian tribes of the region in early days, their names, etc. The name *Missouri* is discussed (p. 263); also the place-names of French Canadian origin (p. 266).

de Créqui-Montfort (G.) Fouilles de la mission scientifique française á Tiahuanaco. Ses recherches archéologiques et ethnographiques en Bolivie, au Chili, et dans la République Argentine. (Int. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 531–50, 8 pl., 9 fg.) Describes the investigations and excavations of the French scientific expedition at Tiahuanaco (10 new necropoli were discovered) and its archeological and ethnographic discoveries in the valleys of Yura and Panagua, Tarija, Puna de Jujuy, valley of Lerma, etc. Among interesting remains are the fortified village (pre-Spanish) of Pucara de Rinconada and the "ceremonial" mounds (for seats of chiefs, etc.) of Pucara de Lerma. Many Aymara and Quechua were measured by J. Guillaume; E. Boman measured 36 Susque Indians from the Argentine Puna de Atacama and studied also the interesting folk-lore of this unmixed, isolated aboriginal people.

—— Fouilles dans la nécropole prehispanique de Calama. Les anciens Atacamas. (Ibid., 551–65, 8 pl.) Gives account of the excavations of E. S. de la Grange in 1904 at the ancient pre-Spanish cemetery at Calama on the river Loa in the province of Antofagasta, Chile, and the finds there made — human bodies (about 100), spades, bows and arrows (not numerous), knives (very common), various implements of wood, stone, etc., rude pottery, basketry, calabashes, woolen cloths, maize and other grains, seeds, etc. (in vessels). The crania (studied by Dr Chervin) are generally brachycephalic (only 2 dolicho out of 60). No metal objects found. The objects from the cemetery of Calama can be duplicated by others from the old necropoli of the Puna de Jujuy in the Argentine, 300 km. distant. This indicates an Atacaman culture, prehistoric, extending *ca.* 22°–24° S. lat., and from the Sierra de Cochinoca westward to the Pacific. The modern Atacameños, or *Lican-antai* (as they call themselves), are probably the last survivors of the prehistoric "Atacamas."

Dieseldorf (E. P.) Extracto del libro antiquo que conserva la cofradia de Carchá. (Int. Amer. Kongr. Stuttgart 1904, 1906, XIV, 339-402.) Gives extract in Spanish with German version (in opposite columns) from an old book in the possession of the Indians of Carchá dating from 1471 A. D., concerning the cacique of Carchá and the cacique Mataobatz.

Ehrenreich (P.) Ueber die Verbreitung und Wanderung der Mythen bei den Naturvölkern Südamerikas. (Ibid., 659–80.) Treats of the distribution and migration of myths among the South American Indians, particularly the twin culture-heroes myth of the Tupi, Arawak creation and cave myths, flood myths, etc., Carib flood, twin-hero myths, etc., Karaya myths with *märchen* elements, etc. E. thinks that the most independent myth-cycles are the Tupi and the Arawak (little contact also between these); the Karaya myths are not related to those of the surrounding tribes. As important centers for culture-contact of all sorts may be mentioned: Guiana and the lower Orinoco region; the central Rio Negro (with the Uaupes and s. w. tributaries of the Orinoco); the source-region of the Xingu and Paranatinga. The wider relations of South American myths (with N. America, Asia, Polynesia, etc.) are discussed at pp. 672–80, and the subject has since been treated at length by E. in his *Mythen und Legenden der Südamerikanischen Urvölker* (Berlin, 1905).

Friederici (G.) Die Ethnographie in den "Documentos Inéditos del Archivo de Indias." (Globus, Brnschwg., 1906, XC, 287–89, 302–5). Points out the valuable ethnographic data in this collection (ser. I, vols. I-XLII, 1864–84; series II, vols.

I–XIII, 1885–1900), which has been as yet little used by investigators. They contain useful items about the buffalo and other wild and domestic animals, the social and economic conditions and relations of the Indian tribes, agriculture, food and food products, slavery, cannibalism, fishing and hunting, navigation, dress and ornament, weapons, war, architecture, marriage and family life, etc.

Froidevaux (H.) Un nouveau chapitre de l'histoire des flibustiers des Antilles. (Int. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 355–6.) Notes on the Darien filibusters of the 18th century — abstract of paper. Based on a MS. of Vivant de Maissagues, 1763, and on an anonymous *Mémoire historique sur les Indes Braves et les Forbans françois du golfe de Darien* (Amsterdam, 1743). A famous filibuster chief was Petit Pierre (d. *ante* 1734); another, Dupuis (*ca.* 1750).

Göldi (E. A.) Ueber den Gebrauch der Steinaxt bei jetzt lebenden Indianern Südamerikas, speziell Amazoniens. (Ibid., 441–4.) Author dismisses the idea of the S. American Indian (e. g., Bakairi) toiling for weeks with a stone axe in felling a tree. The tree is girdled not far above ground in sap-time to induce drying up and dying, followed at the proper time by application of fire, then cut with the axe again, followed by fire, etc. — thus axe and fire together finish the work. Dr G. suggests that prehistoric man used the same device.

—— Altindianische Begräbnisurnen und merkwürdige Ton- und Steinidole aus der Amazonas-Region. (Ibid., 445–53.) Brief account of the old burial-urns of the region about the mouth of the Amazon, particularly the discoveries of 1896. These urns are of three types, and some are clearly post-Columbian. These Maracá urns are ultimately to be attributed to some Nu-Aruak tribe, or perhaps some Carib horde reaching this art through captive women. Also treats of the clay idols from the burial-places of extinct Indian tribes on the island of Marajó which have their modern equivalents in the massive life-figures of the Carajás of to-day; and the Amazonian stone idols from localities on the Rio Trombetas, Lake Sallé, etc. The ever-present motive of these stone idols is an animal in conflict with man, the latter always succumbent, possibly a symbolic representation of his weakness as against the powers of nature.

Gordon (G. B.) Notes on the Western Eskimo. (Trans. Dept. Archæol. Free Mus. Sci. and Art, Univ. of Penn., Phila., 1906, II, 69–101, 18 pl., 23 fg.) Treats of habitat and food (increasing dangers of extinction of Alaskan Eskimo, from weakening of physical strength, etc. (through change in diet); trade (stimulated by intertribal festivities); education (good if properly adapted, but "I know of nothing that civilization can offer the Eskimo that is capable of taking the place of their hereditary forms of entertainment"); condition of native arts (clothing, weapons, boats, drawing and carving, personal decoration, tattooing, labrets; until quite recently all the materials used in the arts were of local production); pottery (none now made, but formerly pottery lamps and cooking vessels); string-games (19 figures described). This paper is valuable as indicating the changes that have occurred since the visit of Nelson 1877–81 among the Eskimo of the Alaskan coast.

—— An engraved bone from Ohio. (Ibid., 103–5, 3 pl.) Describes an engraving of a puma or a lynx on a bone found in a mound at Cincinnati in 1801 and reproduced in an old print in the collection of the University Museum — the plate having been cut from some octavo volume.

de la Grasserie (R.) La langue Tehuelche. (Int. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 611–47.) This monograph on the Tehuelche (Tsoneka) language of Patagonia contains a Tehuelche-French (from republished MS. of A. d'Orbigny in Paris, National Library) vocabulary of about 600 words, with a number of others (Ramon Lista, v. Martius, Brinton — including the "Hongote," afterward found to be Salishan, and Patagonian, Musters, F. Müller, D. Melanesi). The author compares Tehuelche with Pehuelche and the Fuegian tongues, finding some striking resemblances (*e. g.*, names of parts of body) between Tehuelche and Ona.

Hagar (S.) The Peruvian asterisms and their relations to the ritual. (Ibid., 593–602.) Treats of the star-groups, etc., their names, the festivals connected with them, among the ancient Peruvians. H. thinks that the correspondence between the Peruvian ritual and that of Walpi (Pueblo) is "too striking to be accidental." The Peruvian ritual is pre-Columbian. The Peruvians "believed

that everything on earth reflected in form and all other characteristics the attributes of its prototype which exists invisibly in the sky." This prototype was called *mama* (mother).

Handelsbeziehungen zwischen Japan und Mexiko im Beginne des 17. Jahrhunderts. (Globus, Brnschwg., 1906, XC, 205-6.) Résumés the recent monograph of Mrs Zelia Nuttall.

Hay (R.) Kaw and Kansas: a monograph on the name of the State. (Trans. Kans. State Hist. Soc., Topeka, 1906, IX, 521-6.) Author cites "24 forms of the word [*Kaw, Kansas*] applied to the Indians, or to the river, or to both, and 10 forms of *Arkansas*." Kaw appears to be "a legitimate abbreviation" of "*Kauzau*, the way one tribe pronounced their own name," — *Kansa(s)* is the same word nasalized.

Holmes (W. H.) Contributions of American archeology to human history. (Int. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 345-54.) Treats of quarrying and mining (America's contribution "exceptionally full and satisfactory"), architecture (from lowest stage to about level of keystone arch), sculpture ("the whole story of the evolution of sculptural phenomena within the horizon of barbarism"), metallurgy (smelting of ores in its infancy; but gold, copper, and silver were extensively employed, and "forged, fused, cast, alloyed, and plated, and otherwise handled with a skill that astonished the conquerors"), ceramics ("pre-Columbian Americans furnish a larger mass of material for the study of this art up to level of glaze and wheel than any other known people"), graphic art (illustrates evolution from lower margin of glyphic to very beginning of graphic), etc. America exemplifies all steps of culture from the savage to the lower limit of civilization.

Hrdlicka (A.) Contribution to the physical anthropology of California. (Univ. Calif. Pub., Am. Arch. and Ethn., Berkeley, 1906, IV, 49-64, 10 pl.) Treats, with details of measurements, description, etc., of 47 skulls of adult Indians, chiefly from the central counties of California. The mainland crania are characterized mostly by small size (the mean size is nowhere on the continent lower) and by a marked sagittal elevation, connected possibly with small cerebral growth. Of the male skulls 72 percent, of the female 92 percent are mesocephalic. Most, if not all, of the California tribes to-day, in spite of their linguistic and other differences, have apparently sprung from one original people. Dr H. sees somatic relations also between Californian Indians and many Mexican tribes and peoples — Otomi, aborigines of Puebla, Michoacan, Aztecs even; also Tarahumare, etc. An original identity of all of these is deemed probable. The peoples of Arizona and Sonora (ancient as well as modern) are not allied physically to the Californians.

von Ihering (H.) Ueber das natürliche Vorkommen von Nephrit in Brasilien. (Int. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 507-15.) Describes, with account of chemical composition, etc., axes and blocks of nephrite (now in the São Paulo Museum) from Amargosa (Bayatinga) in Bahia, which indicate the occurrence of nephrite *in situ* in the coast mountains of this region. The local origin of the nephrite *muiraquitas* (amulets) of the Amazonas region will probably be demonstrated ere long.

de Jonghe (E.) Der altmexikanische Kalender. (Z. f. Ethn., Berlin, XXXVIII, 485-512, 4 fg.) Treats of the *tonalamatl* and the solar year, the 18 month festivals, the relation of the Mexican year to the real solar year, the correspondence of the Mexican with the European years, theories of intercalation, synchronological tables (the author gives one for 1519-22), etc. The calendar-wheel of Valedes owes much to the synchronologic efforts of the monks.

Koch-Grünberg (T.) Die Makú. (Anthropos, Salzburg, 1906, I, 877-906, 5 pl.) After a brief general account of the Makú of the Rio Negro-Yapurá region of Brazil, whose language forms a distinct stock, Dr K. gives vocabularies (pp. 885-99) from the closely related dialects of the Rio Curicuriarý and the Rio Tiquié and the Makú of the Rio Papurý only distantly related apparently; and a grammatical sketch of this interesting tongue. A few loan-words are listed. This is a valuable addition to our knowledge of S. American languages. The illustrations are of Indian types.

Krämer (A.) Curaçao, nebst einigen Bemerkungen über eine westindische Reise 1899-1900. (Globus, Brnschwg., 1906, XC, 293-99, 7 fg., map). Contains a few notes on language (Papiamenta jargon), and refers to the finding of stone axes and other evidences of pre-European inhabitants.

Krankheiten (Die) der Indianer. (Ibid., 256.) Brief résume of Hrdlička's monograph. See *American Anthropologist*, 906, VIII, 189.

Lahy (J. M.) Genèse de la notion d'âme d'aprés quelques textes ethnographiques. (A. d. V. Congr. Int. di Psicol. Roma 1905, 1906, 707–714.) Treats of the conception of the soul among the Eskimo of Alaska, the Tlingit, Bellacoola, and Kwakiutl Indians of the N. Pacific coast. Based on Nelson, Krause, and Boas. The conception is material with some touch of the spiritual. All things possess a double.

Lehmann (W.) Zu dem Aufsatz "Das Wissen der Quiché-Indianer in mythischer Form." (Globus, Brnschwg., 1906, XC, 274–5.) Criticises the article of Prowe (q. v.), particularly the etymologies of Xbalanque, Hurakan, Huitzilipochti, imox, Hunaphu, etc., and their mythological interpretations.

—— Altmexikanische Mosaiken und die Geschenke König Motecuzomas an Cortés. (Ibid., 319–22.) Treats of the 23 specimens of ancient Mexican mosaics (London 9, Rome 5, Berlin 3, Vienna 3, Copenhagen 2, Gotha 1), which, with 2 described in the 17th century and since lost, represent the material of this nature in the museums of Europe. Of these 23 mosaics, 9 are masks, 5 heads and figures of animals, 3 knife-handles. The home of mosaic art seems to have been in the regions east of the Mexican plateau, and to these non-Mexican countries appear to belong most of the 23 specimens; part were doubtless a portion of Motecuzoma's gift to Cortés.

—— Die Historia de los Reynos de Colhuacan y de Mexico. (Z. f. Ethn., Berlin, 1906, XXXVIII, 752–60.) Treats of the nature and contents of a MS. (described by Boturini) in the National Library, Paris. The unpublished part is important for the mythology and history of Mexico.

—— Einige Fragmente mexikanischer Bilderhandschriften. (Int. Amer.-Kongr. Stuttgart 1904, 1906, XIV. 321–42, 5 pl.) Reproduces and describes three fragments (a list of natural products, a tax-list, a genealogy) of ancient Mexican MSS. in the Royal Library at Berlin, and a genealogical tree of 50 persons, belonging to the Uhde collection.

Lehmann-Nitsche (R.) Europäische Märchen unter den argentinischen Araukanern. (Ibid., 681–94.) Gives German texts of 6 tales from the Argentine Araucanian Indians, which strongly suggest borrowings from European *märchen* of the Grimm type, etc.; the greater part of the *märchen* and animal fables of these Indians shows, however, no such influence.

Lutz (J. J.) The Methodist missions among the Indian tribes in Kansas. (Trans. Kans. State Hist. Soc, Topeka, 1906, IX, 160–230, 20 fg.) Gives interesting information concerning missionary activities (white and native) among the Shawnee, Kaw, Delawares, Kickapoo, Peoria and Kaskaskia, Potawatomi, Wyandot, etc. Among the individual Indians treated of are: Rev. C. Bluejacket (Shawnee); Mrs A. M. Grinter, Rev J. Ketchum (Delawares); S. Armstrong (Wyandot).

Markham (C.) The megalithic age in Peru. (Int. Amerik.-Kongr. Stuttgart 1904, 1906, XIV, 521–9.) M. argues that the origin of Peruvian culture is to be sought in the builders of Tiahuanacu, who "preceded the Incas by many generations." In South America "man existed, with some extinct mammals, before the Andes had risen to their present height" (Tiahuanacu has been lifted geologically since the construction of its monuments). The Titicaca myths are memories of Tiahuanacu and its ancient culture; its language is represented now by Quichua-Aymara. Megalithic culture was of southern (cf. Tucuman, etc.) origin.

Mead (C. W.) Technique of some South American feather-work. (Anthrop. Pap. Am. Mus. Nat. Hist., N. Y., 1907, I, 1–17, 4 pl., 14 fg.) Treats of ancient (Peruvian feather ponchos, head-dresses, shawl, plumes) and modern (feather bracelet and ear-ornament of Chamacoccos Bravos of Paraguay; waist-band of Guatos; shoulder-ornament and wands of the Karaja of Brazil; hat-band and belt-ornaments of Bolivian Aymará; forehead-band of Yahgans of Tierra del Fuego). In the matter of attachment, the Peruvians employed a true knot, modern works show a loop or turn about the shaft. The use by certain Aymaras of artificially (aniline dyes) stained feathers is looked on by M. as an evidence of "decadence."

Mead (J. R.) The Saline country in 1859. (Trans. Kans. State Hist. Soc., Topeka, 1906, IX, 8–19.) Contains some items

concerning Indians (Pawnee, Cheyenne, Sioux, Oto, Kaw). One of the pioneer hunters "had for a tobacco-box an Indian skull sawed in two."

Merwin (R. E.) The Wyandot Indians. Ibid., 73-87.) Historical sketch of the Iroquoian people known to the French as Hurons ("shock-heads") and to the English as Wyandot, from *Wendat* ("of one speech") their native designation. Their earliest home is said to have been north of the St Lawrence. Toward the end of the 17th century they were about Michilimackinac, whence they moved to Detroit; later they were in Ohio, and in 1843 migrated to Kansas. In the French-English war the Wyandot sided with the French; in the Revolution they supported the English. In the war of 1812 part espoused the American cause, part the English, the latter afterward settling in Canada. The provisional governor of Kansas territory in 1853 was a member of the Wyandot tribe through his mother. In 1902 the western Wyandot living on the reservation numbered 354. They are more white than Indian (not even a half-blood now exists; the last full-blood Wyandot died in Canada in 1820).

Meyer (H.) Die Kunst der Xingú Indianer. (Int. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 455-71, 4 pl.) Treats of the art in wood, wax, stone, resin, shell, clay (pottery rich in form), textile substances, skins, nature ornaments, decorative motives, patterns, etc., of the Nabuqua-Akuku, Trumai, and Bakairi Indians of the source-region of the Xingú. The carved and painted house-points of the Trumai, the dance masks of the Trumai, Kamayura, Auetö, Nabuqua, etc., are discussed in some detail. In this region an ethnographic unity exists where there is no linguistic one. Since the introduction of the European knife and axe the art of the Xingú Indians has declined, the old love and exactness in work being lost.

Montané (L.) El idolo de la Gran Tierra de Maya. (R. de la Fac. de Letr. y Ci., Univ. de Habana, 1906, III, 303-4, 2 pl.) Preliminary description of a wooden "idol" of pre-Columbian age, suggesting Mayan influence, found at Baraco, in the province of Oriente, Cuba.

van Panhuys (L. C.) A European custom of pagan times brought over to America. (Int. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 695-9.) Notes on "Hallowe'en" festivities as observed in Chicago in 1902, and allied customs.

—— Ueber die letzte niederländische Expedition nach Surinam. (Ibid., 427-35.) Brief account of the Bakhuis (1901), van Stockum (1902-03), Fransen Herderschee (1903-04) expeditions in the Coppename, Saramacca, Gonini, and Tapanahony regions of Surinam The last expedition visited the Bush Negroes of the Tapanahony, whose influence upon the Indians has been considerable.

—— Näheres über die Ornamente der Naturvölker Surinams. (Ibid., 437-9.) Discusses briefly tattooing (not ceremonial; women exclusively the artists; begun at 7 years and continued for some time) of the Bush Negroes. Favorite figures are the eagle-tail, pine-apple plant, etc. Tattooing is given up on conversion to Christianity. Comparison with the tattooing of Negroes in Africa is suggested.

Pinart (A. L.) A few words on the Alaska Déné in answer to Father Morice, accompanied by a short vocabulary of the A'tana or Copper River Indian language. (Anthropos, Salzburg, 1906, I, 907-13.) P. holds, contra Morice, that the A'tana, a Déné people, do touch the ocean. The vocabulary given contains some 300 words, with 20 words from Capt. Vassilieff, who visited the Kuskokwim country in the first half of the last century.

Plagemann (A.) Ueber die chilenischen "Pintados." Beitrag zur Katalogisierung und vergleichenden Untersuchung der südamerikanischen Piktographien. (Int. Amer.-Kongr. Stuttg. 1904, XIV, Ergzgsb., 1906, 1-87, 7 pl.) After discussing the method and objects of pictographic investigations, P. catalogues, under 6 types (chromolith, petroglyph, relief-petroglyph, various colossal markings and "drawings" of stones, etc.) the Chilean *pintados* (stones, rocks, etc., with signs, symbols, etc., painted on them). A seventh type exists in Argentine. Some *pintados* mark old grave-sites, cult-spots, etc. The *pintados* of southern Chile differ in style from those of the north; those of Cauquenes alone seem to be "genuinely Chilean," (these are related to those of northern Argentine, etc.). The Cauquenes pictographs are not due to outlying Araucanians. In the *pintados* of northern Chile are many traces of Peruvian influence. The style of the *pintados* of Tarapacá, P. thinks,

is "as early as that of the oldest architectural ruins of Peru-Bolivia." The riddle is not yet solved.

Preuss (K. T.) Sonnenfeste der Altmexikaner und der Moki. (Ibid., 343–4.) Brief comparison of the sun-festivals (Soyalunga, Powamû) of the Moki with those (xocotl uetzi, etc.) of the ancient Mexicans. The situation of the realm of the dead in the center of the earth, and also in the west, occurs with both peoples. The summer animals are primary.

Prowe (R.) Das Wissen der Quiché-Indianer in mythischer Form. (Globus, Brnschwg., 1906, XC, 157–60.) Treats of "the traces of almost scientific insight" in the mythologic data of the Quiché Indians as recorded in the *Popol Vuh*, the *Titulo de los Señores de Totonicapan*, etc. — creation-myths (with evolutionary aspect), flood-legends, myths relating to volcanic eruptions, earthquakes, etc., meteorology, astrology, etc. Dr P. accepts the views of Mrs Nuttall *re* swastika, Hurakan, etc.

Regel (F.) Die Reste der Urbervölkerung (Indios bravos) in der Kolumbischen West-Kordillere nach eigenen Beobachtungen im Jahre 1896. (Int. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 517–20.) In 1896 Prof. R. found remnants of the Chocos Indians in the region of the Andes; other unmixed aborigines about Frontino in N. W. Antioqua. Colombia has a population of about 4,000,000 ("white" 50 percent, Indian 40 percent, Negro 10 percent — a good deal mixed).

Ridgeway (W.) Note on the motives carved on same Haida totem spoons and pipes. (Man, Lond., 1906, 145–8, 1 pl.) Describes the carvings on a spoon in the author's possession and on two others in the British Museum; also on a fine old pipe in the British Museum. One spoon has the motive of a woman clasping a frog or a toad to her breast and kissing it, another a woman and a bear, a third a woman and a butterfly clasping each other; the pipe a woman and a raven in such union. Prof. R. considers these to signify totemic origins.

von Rosen (E.) The Chorotes Indians in the Bolivian Chaco. (Int. Amer. Kongr. Stuttgart 1904, 1906, 649–58, 13 pl., 1 fg.) Based on visit of 1901–02. Treats of physical characters (av. height: men 170 cm., women about 152 cm.; dolichocephalic, no signs of deformations), clothing and ornaments (ear-pegs, face-tattooing as puberty-signs), houses and villages (village-chieftans and tribe-chieftain over all), utensils, fire-making (twirling arrow-shaft), activities, weapons (bow and arrow, chaguar fiber coat of mail; burning arrows used to set huts on fire, play (gambling with chips; hockey-like game — the stakes, which are necklaces of disks of mollusk shells, are legal tender in the Chaco), music (not highly developed), spirit-lore (evil-spirits shown great respect, good thought harmless), death and burial (death-dances to protect deceased), language (different from Matacan, Toban, etc.). According to v. R. the Chorotes "did not appear to be any lethargic or degenerate race (in contrast with the Matacos)," but quite the contrary. If subject to the evil influences of the whites however, they will gradually become extinct.

Sapper (K.) Titulo del Barrio de Santa Ana. Agosto 14 de 1565. (Ibid., 373–81.) Gives Pokonchi text and Spanish version (by V. A. Narciso) in parallel columns. See: *Stoll* (O.).

—— Sitten und Gebräuche der Pokonchi-Indianer. (Ibid., 403–17.) Based on the MS. *Estudios geográficos, históricos y etnologicos de San Cristóbal Verapaz* of V. A. Narciso. Treats of habitat and activities, clothing, habitations, house-building festival and *sarabanda*, character, marriage (proof-period), religion (Christianity and heathenism mixed), doctors, wizards, shamans, sickness and death, astronomical knowledge, names of months and days of the week, counting. Text, translation, and music of mourning-song.

Seler (Cecilie). Zur Tracht der mexikanischen Indianerinnen. (Ibid., 419–26, 4 pl., 2 fg.) Treats of the dress of Mexican Indian women (Mazatec, Huave, Guatemala, Oaxaca, etc.). Tribal differences in form due to climate and topography existed. In the modern shirts and coats the ancient patterns are not preserved — the Indians transformed European patterns in decoration, etc., or created others in their style, not merely and simply imitating them. Much technique is also of European origin.

Seler (E.) Parallelen in den Maya-Handschriften. (Globus, Brnschwg., 1906, XC, 187–93, 14 fg.) Discusses various parallels between the Dresden MS. and Codex Cortès.

Sergi (G.) Contributo all'antropologia americana. (A. d. Soc. Rom. di Antrop., 1906, XII, estr., pp. 10, 1 pl.) Discusses three types of American Indian skulls: Peruvian (*Sphenoides parvus peruvianus*), Bolivian (*Ovoides bolivianus*), mound-builder (*Sphenoides*, a cuneo). The first, according to S., indicates a Negrito or Oceanic Pigmy element in ancient Peru; the second a Melanesian element in parts of South America; the third Asiatic immigration into North America.

Smith (H. I.) Some Ojibwa myths and traditions. (J. Am. Folk-Lore, Boston, 1906, XIX, 215-30.) Gives English texts of 7 legends (the invasion of the valley, the war-party that saw the thunder-bird, Mejewedah, the white deer, the girl with the long hair, the rape of the Ojibwa maiden, the peculiar Nomitchine), with many interesting historical, explanatory, and interpretative notes, etc. The Ojibwa refer to their enemies, the Sauk, as "savage and bad," taking the attitude of the so-calied "higher" races.

Stoll (O.) Titulo del Barrio de Santa Ana. Agosto 14 de 1565. (Int. Amer.-Congr. Stuttgart 1904, 1906, XIV, 383-397.) Gives phonetic transcript of Pokonchi text and rendering in German of the "titulo," or title of possession of the people of Sta Ana in Chama. Divergences from the modern Pokonchi of the locality are noted. See: *Sapper* (K.).

Teschauer (C.) Mythen und alte Volkssagen aus Brasilien. (Anthropos, Salzburg, 1906, I, 731-44.) Brief cosmic myths and "old traditions," in German text, with comments and explanatory notes. The beginning of the world (Munduruku legend), the origin of the river Amazon (from the region of Solimões), the origin of plantation (Mura), myth of Orion (Makusi of Rio Branco), Pleiades, Canopus, Tamanduaré — the Brazilian Noah — the two brothers, the origin of manioc, etc. In the transmission of these legends from generation to generation the *pajés*, or medicine-men, had a large share.

Thompson (A. H.) Dental lesions among the ancient Peruvians, Mexicans and mound-builders. (Dental Brief, 1906, repr., 1-15 1 fg.) Gives results of observations on 500 Peruvian and some Mexican and mound-builder skulls. Dr T. find smany dental lesions, etc., in the Peruvians and believes them "due to the swift changes produced by the rapid acquirement of a higher culture and luxurious living, as compared with the true savages." The Nahuas (Aztecs), "more savage than the Peruvians," had "neither the same refinement of osseous structure, nor the same amount of dental disease." The dental structure of the mound-builders offers "a mixture of savage and refined features."

Torres (L. M.) Classificacion y exposicion de colecciones arqueológicas en museos argentinos. (An. Mus. Nac. de Buenos Aires, 1906, XIII, 379-407, 5 fg., map.) Discusses system of classification of Argentine archeological collections, technique, exhibition, etc. In his "geo-ethnic" map, T. recognizes in Argentina 6 regions: Chaco, Parana, Central, Pampean, Andean, Patagonian. Upon this the classification is based.

Uhle (M.) Bericht über die Ergebnisse meiner südamerikanischen Reisen. (Int. Amer.-Kongr. Stuttgart 1904, 1906, XIV, 567-79, 4 fg.) Discusses investigations in the region of Trujillo (Chimu-culture, pottery, textile fabrics), Huamachuco, the valleys of Chincha, Pisco, Ica (remains of middle periods most common: the pottery of Trujillo and Ica stands at the beginning of Peruvian culture as now known), the shell-heaps of Ancon, whose pottery-fragments are in age close to the oldest culture of Ica.

——. Aus meinem Bericht über die Ergebnisse meiner Reise nach Südamerika 1899-1901. (Ibid., 581-92, 10 fg.) Discusses the historical position of the fine decorated pottery of Ica to the other prehistoric Peruvian remains. Though different if merely superficially regarded, the styles of Trujillo and Ica are nevertheless related. Both are older than the style of Tiahuanaco, and that of Ica seems intermediary.

Ullrich (C. O.) Die Tapes. (Ibid., 473-506, 21 fg.) Ethnological sketch of the Tapes, a Tupi people (no pure representative now survives), once populous in the so-called "Provincia de Tape" (nearly S. E. of the present Rio Grande do Sul), with account of the Pelotas collections (pottery, 12 specimens; pipe-heads, 10; stone implements, etc., 43; shell toys, etc., 3; fish bones, 2; iron axes, etc., 3) of Tapes material and indications where every object was obtained. History, race, religion, character, life and activities, weapons, implements and utensils, pottery (painting,

decoration, etc.), stone-working, etc., are briefly considered. U. seems to find evidence of "a Mongolian intermixture" in the Tapes. Their mode of life was altered in several respects by the introduction of cattle and the horse. They "made over" iron obtained from the whites.

Wiklund (K. B.) Lappan och renar i Alaska. (Ymer, Stckhlm., 1906, XXVI, 181–5.) This brief account of the introduction of reindeer and their Lapp herdsmen into Alaska is based on U. S government documents.

Wintemberg (W. J.) German tales collected in Canada. (J. Am. Folk-Lore, Boston, 1906, XIX, 241–4.) Five brief tales: Blacksmith and Beelzebub's imps, witch story, Devil's bridge (Alsatian), snake king (German-Poland), fairy wife or nightmare (Alsatian).

Wissler (C.) Some protective designs of the Dakota. (Anthrop. Pap. Am. Mus. Nat. Hist., N. Y., 1907, I, 19–53, 3 pl., 26 fg.) Treats of shield-designs, ghost-dance designs ("ghost-shirts" of the religious excitement *ca.* 1890), the hoop (game-hoop, medicine-hoop), the whirlwind (associated with fluttering wings of moth and with its cocoon), the thunder (usually associated with military exploits and symbolized by the eagle), the spider (it and its web are associated with the thunder and the mythical elks; 'the spider man"), etc. Dr W. noted the animistic basis of these conceptions (but plant and inanimate forms are almost entirely excluded). A striking thought is "the time when animals were as people." "Prayers are more for protection to be able to destroy than for direct destruction."

ANTHROPOLOGIC MISCELLANEA

Anthropology at Minnesota University.— There is a growing demand for the professional anthropologist in our universities. There seems to be a realization of the value of Anthropology as a culture study, a professional study, and as the foundation work for other sciences, especially the social sciences, as Sociology, History, Economics, and Politics.

An illustration of the realization of this value of Anthropology by university students is taken from the present year's enrolment for the subject at the University of Minnesota. Anthropology by name, Course VII below, was first offered in Minnesota the first semester of the year 1906–'07 by Professor A. E. Jenks; it was elected by six students. The course was offered again the second semester, and was elected by 83 students. The second semester an advanced course, number VIII below, was also offered, which was elected by 18 students—giving a total of 101 the second semester in strictly anthropological courses.

Of the thirteen courses printed in the Minnesota catalog for the Department of Sociology covering the year 1907–'08, nine, or all except numbers II, III, IV, and XIII, may properly be named courses in Anthropology.

The syllabi of the courses are as follows:

I. Descriptive Sociology. *Professor Jenks.*

This is a preliminary course designed as the first work of students in the Sociology department. It presents concrete data concerning human associations, showing groups of peoples living in the four grades of culture called savagery, barbarism, civilization, and enlightenment; and it discovers the activities and institutions natural and peculiar to those cultures. Text-book, lectures, assigned readings, and thesis. Open to Juniors and Seniors.

II. Elements of Sociology. *Professor Jenks.*

This course is designed to give a general knowledge of the field of modern Sociology, the attempt being to prepare students for such special sociological investigations as they may wish to make. Text-books, lectures, assigned readings, and thesis. Open to Juniors and Seniors.

III. Social Pathology. *Professor Smith.*

This course deals with problems of poverty, crime, insanity, social

degeneration, and a discussion of the child problem and methods of social amelioration. Open to Juniors and Seniors.

IV. SOCIAL THEORY. *Professor Smith.*

This course includes a study of the leading American, English, French, and German writers to discover their methods of approach to the science and the leading results they have obtained. Open to Juniors and Seniors who have had Courses I or II.

V. SOCIAL GROUPS. *Professor Smith.*

This is an examination of the clan and the village in primitive life, a study of demography to discover the effect of environment on social organization, and a comparison with the nature of and reasons for the modern city.

VI. THE STUDY OF INSTITUTIONS. *Professor Smith.*

The genesis of custom and the beginnings of law, with the geographical and race influences in the growth of states will be studied, as well as the various forms of the family and their relation to forms of civilization.

VII. ANTHROPOLOGY. *Professor Jenks.*

This is an elementary course studying the essential characteristics of mankind, and the general features of the several races of man. It investigates primarily the origin and development of the series of activities and various institutions which have had their beginnings in primitive society. Text-books, lectures, assigned readings, and thesis. Open to Juniors and Seniors.

VIII. ETHNOLOGY. *Professor Jenks.*

This is a study of the different races of men in America, Europe, Asia, Africa, and Oceania. The various historical classifications of men into races are presented. The causes of the origin and distribution of the several races and sub-races are sought, and from historical perspective and present indications, an attempt is made to judge of the future development of races. Ethnological problems are also presented. Text-books, lectures, assigned readings, and thesis. Open to Juniors and Seniors who have had Courses I, II, or VII, and to Graduates.

IX. THE PHILIPPINE PEOPLE. *Professor Jenks.*

This course presents the geography, natural resources, and ethnology of the Philippine islands. A careful comparative study of the four large ethnic and culture groups of people is made; tropical influences are noted; the present policy of Insular Civil Government are outlined, so far as it tends to modify the natural characteristics and modern culture of the inhabitants, and to effect American home interests in the Orient. This course aims to present a practical model for the

investigator of human culture, and to introduce students to Oriental race problems; it will also better fit students for government, business, or missionary service in the Orient. Lectures, illustrated lectures, assigned readings, and thesis. Open to Juniors, Seniors, and Graduates.

X. PHYSICAL ANTHROPOLOGY. *Professor Jenks.*

This course studies the physical variations in the human body. It pays especial attention to those variations which distinguish one race or group of men from another; and it seeks the causes and significance of such variations. It also attempts to trace the physical evolution of the human body and to forecast its future, studying both its development and its decline. Six lectures on the development and anatomy of the human brain are given by Professor Charles A. Erdman, M.D. This course is of prime importance to advanced students in the Department of Sociology, and of interest to those preparing for the Medical course. Lectures, laboratory work, assigned readings, and thesis. Open to Juniors and Seniors who have had Courses VII or VIII, and to Graduates.

XI. THE AMERICAN NEGRO RACE. *Professor Jenks.*

This course begins with a study of the Negro's African tribal kinsmen, and traces the rise and development of the American Negro race from the birth of American slavery. The prevalent characteristics, traits, and conditions of the Negro are especially considered. The developing tendencies of the Negro are studied for the purpose of considering the probable future of the American Negro race. Lectures, assigned readings, and thesis. Open to properly qualified Juniors and Seniors, and to Graduates. Not given in 1907-'08.

XII. THE AMERICAN PEOPLE. *Professor Jenks.*

This course presents the distribution in the United States of the different peoples of the world found here. It seeks the natural genius of the peculiar home development of these peoples, and notes the modifications of this development in America, thus portraying the ethnic contribution of each to American civilization. It aims to discover the dominant physical, mental, and moral characteristics of each people, and attempts to determine the relative importance of each to the Nation. Lectures, assigned readings, and thesis. Open to properly qualified Juniors and Seniors, and to Graduates. Not given in 1907-'08.

XIII. BIBLICAL SOCIOLOGY. *Professor Smith.*

Lectures, and the Old Testament as a text-book. Not given in 1907–'08.

On Pigment Spots in New-born Children. — The article of Dr Joseph Brennemann on this subject (*American Anthropologist*, N. S.,

vol. 9, no. 1, p. 12) induces me to make a few remarks and additions. Dr Brennemann's observations on the occurrence of congenital pigment spots in American negro children are very interesting and valuable indeed, particularly as he presents some entirely new and long-wished-for data. His results again prove — if further proofs were needed — that these spots are found wherever one has looked for them, and that Baelz's theory as to their being a "Mongolian" characteristic is erroneous.

Observations on pigment spots in negroes of the United States had not hitherto been made, so far as I know, but the Brazilian negro has already furnished material of the character under discussion. I believe that in this connection Dr Brennemann might have quoted Dr Olintho de Oliviera of Porto Alegre, who states that the blue spots are "extraordinarily frequent, and more frequent among the descendants of negroes than among any other race." This observer further says that the younger the child, the more readily visible are the blue spots. They disappear afterward, particularly for the reason that the general pigmentation of the body, typical of the race, increases with age and so renders the spots invisible ("ganz besonders deswegen, weil die für die betreffende Rässe typische Körperpigmentierung, welche mit zunehmendem Alter des Kindes immer Stärker Wird, alles nivelliert." Quoted by Lehmann-Nitsche in *Globus*, LXXXVIII, no. 7, 1905). I believe this interpretation to be perfectly correct, especially in view of Dr Brennemann's statement that after the first or second year "the areas have become faint or absent, and the dark epidermal pigment has covered the remnant." Obviously for this reason Dr Brennemann never saw "a spot well marked after the third or fourth year."

As for Dr Ashmead's interpretation, I think it hardly worth discussion.

In his brief review of the recent literature on the pigment spots, Dr Brennemann has overlooked the valuable *Anatomisch-histologische Studien über die Sog. Kinderflecke*, by Dr T. Katô.[1] The researches of this Japanese anatomist are interesting for more than one reason. In 600 children he examined the occurrence of these spots with reference to age, finding that until the thirteenth year the spots are still visible in three percent. Dr Katô showed also that the location of the pigment cells that cause the blue spots vary according to the age of the children — in the fetus the cells lie deepest in the skin; after birth they have a tendency to spread toward the surface, and at the time of their disappearance they lie nearest to it. The cases in which the spots were not evanescent, but persisted

[1] Published in *Mittheil. der med. Facultät der K. Japan. Universität zu Tokyo*, VI, no. 4, 1905.

during life in adults, proved to be identical in every respect with those of infants and children.

As for my own contributions to this subject, Dr Brennemann quotes them, it is true, but judging from some omissions he must have read two of them somewhat superficially. For instance, no mention is made of the occurrence of the blue spots in pure Aino children, and yet Sekiba found them in 10.6 percent. This is a strong argument both for the ubiquity of their occurrence and against the former "Mongolian" theory, for the Ainos are Caucasoids and as little Mongolian as the Singhalese or the Tamils. The latter peoples also are not mentioned by Dr Brennemann, although the present writer was the first to observe the pigment spots among their children in Ceylon.

It would seem that Dr Brennemann has misunderstood a passage in my first paper on the subject in question. There is no Japanese god Kami-Sama. These words mean a god in general. The god or goddess who presides over births, as I later learned, is Ubugami. I have heard it said, too, that the blue spots are caused by the pinching or slapping of Shimei, a god who controls the lives of men.

As for Dr Brennemann's final conclusion — "We can no longer consider these spots as exclusive race characteristics" — I think every unbiased observer must endorse it. But it is not new, for I myself formulated a similar conclusion in 1902, and more than three years ago expressed my conviction in a second paper[1] as to the ubiquity of these spots. Reference to this would not have been inappropriate; but these unintentional omissions in no way diminish the value of Dr Brennemann's personal observations.

Finally, I wish to record here a few observations that have come to my notice since my last contribution on this subject.

Dr Bleyer, in Santa Catharina, southern Brazil, found the blue sacral spot "in its characteristic form among all little children of the Cāingā'eng Indians."[2] Statistics however are not given.

A friend of mine, Mr J. Kalff, a great hunter and sportsman, informed me some time ago that he had observed these spots, quite accidentally, in one or two cases among Indian children in Dutch Guiana (Surinam), either Arawak or Carib; but not being an anthropologist, he paid no further attention to it.

Dr Lehmann-Nitsche, whom I met last year at the La Plata Museum, shortly after his successful trip to the western Chaco border, said he had

[1] *Globus*, LXXXVII, no. 4, p. 58.

[2] *Zeitschr. für Ethnologie*, 1904, p. 832.

noticed a sacral pigment spot on an Indian baby, of the Toba tribe, if I remember correctly. This spot was small and not very well marked.

In conclusion, let me express the hope that the phenomenon in question may be studied by American anthropologists among the Indians of the United States. This is a real desideratum. With the excellent field training that has enabled American ethnologists always to distinguish themselves, and with a wealth of material at hand, these future researches will certainly prove interesting and valuable to both somatology and folklore.

H. TEN KATE.

TOKYO, JAPAN, *May 20, 1907*.

The Arts and Crafts Movement. — All anthropologists may be interested in an exhibition held in Boston early in 1907, under the auspices of the Arts and Crafts Society; it was in celebration of the tenth anniversary of the organization of the Society. Results in the applied art of the world form the contents of ethnological museums — the applied art, that is, conscious or unconscious of tribes and peoples. Of prehistoric races, only such "artifacts" as are of permanent material are shown; of primitive peoples "artifacts" of materials generally easy of access and of long habit in working are considered; of contemporary civilized nations "artifacts" are of interest only so far as they show (1) special adaptation by a circumscribed people of a particular material, (2) peculiar control of materials and of their adaptation to utility, (3) representation by symbolic means of ideas inherent in the people, (4) development pointing backward to a series of steps in change of form or decoration, or forward to similar steps that may be predicted, (5) interrelation of different peoples, resulting in grafting, borrowing, or incorporation. Ethnologists will find little under the first two headings in the United States; our people are not circumscribed; travel and printing have taught us a general use and control of all materials. We have not acquired as yet a skill in glassware equal to that of the Viennese, nor yet in leather, nor in ivory; we have not molded matter into music as have the French, nor into chronological minuscules as have the Jura Swiss; the Belgian lace, German lenses, Italian mosaics, Greek and Turkish embroideries, Russian brass, all still bear the stamp of supremacy, and we have probably a long course of study before nation, state, or county will force recognition of a proper name with a common noun. When we do "arrive" it will probably be the case that separate industries flourish in "colonies," perhaps each arising through inspiration, imitation, or continuation of the smaller communities abroad. The Oneida Community, the Roycrofters of East Aurora, New York, and various technical schools and

industrial and educational unions throughout the country are cases more or less in point. Such a colony in a sense is the Arts and Crafts Society — an entity with economic not geographical denotation and worth attention through its principles and through its productions.

In the preface to the Catalogue it is written : " The Arts-and-Crafts movement is founded on the belief that the objects of daily use are just as capable in their lesser degree, of being made the vehicles of artistic expression and thus of being works of art, as are the works of painting or of sculpture. If they are to be so, it is clear that they must be the work of men and women who in their degree are artists, and that they must thus be made by the hand of the artist himself. . . ." The breadth of the Society's efforts shows that they assume the general use of all materials and, in individual skilful cases, control over them; therefore it remains to consider the other aspects of results, of artistic objects accomplished and their meaning. It may possibly be assumed that the Society is a *Bahnbrecher*. Of original applied art that is beautiful, until the close of the nineteenth century we have had little. Therefore the Society assists at its own birth and springs from and largely because of a void. Let our comparisons begin here. The art of the Society is distinctly self-conscious, thus allying it with the civilized fine arts. The applied art of primitive peoples and to a great extent their fine art is largely unconscious. Whatever their origin, dancing, music, the graphic arts, decoration, form, color are very largely with them fixed and stereotyped; conventionalization more or less spells unconsciousness. The symbolism or which of course the primitive artists are conscious, itself demands fixed modes of expression, these the artist produces and the result tells a story; the primary idea is content, not esthetic pleasure. Now the content in the esthetics of primitive applied art is largely of the race, tribe, gens, or family, symbolic of totem, mythology, or history; and dependent in its non-symbolic aspects, on purely natural initiative and development. So too with civilized peoples which possess well defined qualities. The Russian head-dresses differ from the Dutch. Louis Quinze and Chippendale are not of a piece, a Greek ikon does not recall a Roman crucifix, the gingerbread of Dijon and the *Eiserkuchen* of Zerbst are not the same. Religious bodies and orders, armies at variance, guilds, societies, fraternities, the various strong unifying forces beget special significant artistic forms in things pertaining thereto; in the past the limited communication of state with state, of valley even with valley, engendered and favored individual growth and expression. All this is changed in this country; heterogeneous, restless and flitting, the people of the United States have

had no time for the development even of an "American idea" in the fine arts, *a majore* not in the applied.

Such an idea may not be attainable or even desirable; certainly it does not exist. Therefore the artists and craftsmen from Portland to Portland, believing every kind of doctrine, related to every modern foreign nation, will be forced for many years to get along without the national informing American idea, as an impetus to esthetic expression. A possible way out is in a splitting up; the craftsmen of Deerfield, Massachusetts, Detroit, Colorado Springs, New Orleans, may and should show local self-interest. Let them assume totems (as has been done sporadically). The elm, a conventionalized stone fence — a doughnut for Massachusetts, a running broad water motif for Detroit, a symbolic horizon or sky line of mountains for Colorado, a host of fascinating flowers or trees, or a graceful representation of the hanging moss for Louisiana; all this is possible; history, heraldry, family traditions may be made to serve. Thus locally a decorative art not unmeaning is at any rate in posse.

The fourth point as to the degree in which the Arts and Crafts movement is a term of an artistic series is difficult to fix. If it is a term at all it is the first term, for its forms show very little serious reference to the past. The struggle to get away from the hideous canons of the Victorian age may be observed. We have loving cups still ugly, but not as ugly as most club-house mantel decorations; crockery still useful and awkward but hopeful; needlework most deft and geometric, yet not as literally straight-laced as the tidies that even our fathers turned away their eyes from. As for the future there is abundance of hope. We don't know where we are going to run, but we do know we are not going to run the way of sentimentalized groups at critical life-stages, or of bulbous forks pointing not to meat, but to the bank account, of prismatic lozenges bounding mill-worked doors, of concentric scintillations likely to cause forgetfulness of taper fingers or swelling bosom thoughtlessly contributed by nature. We are going to run somewhere, but not there. Our destination depends on the taste of the people who buy, the taste depends in our education of it, and our instruction will flow from the artistic point reached. So at any rate there is hope of running about in a circle that is fairly good at present and that may give us the encouragement of developing itself into a spiral.

The fifth point, that of the influence upon the Arts and Crafts movement of applied arts of individual peoples is the most tangible for anthropologists. All designs beautiful in themselves are for them to adopt, and

as the present taste runs to primitive forms of design, so we find copies and suggestions all the way from Tusayan to Abydos.

This taking over of primitive designs is open to two lines of questioning.

First, are they beautiful on the principles of pure design? The Arts and Crafts workers assume that they are or at any rate use the right of individual selection of those that approve themselves. Whether the workers by a violent process of conception could not bring forth original patterns more beautiful as to line, color, form, mass, spotting, proportion, etc., than those borrowed remains to be seen; attempts in this direction have frequently failed. The critical public, however, will reserve in this case the right of private judgment.

In the second place, the adoption of alien, barbaric, or primitive motives in decorative art takes place without an adoption at the same time of the spirit in which they were conceived and worked out and of the inner meaning, largely religious, represented by them in their native country. So an ethnologist will take greater pleasure in regarding a Navaho blanket (made even with aniline dyes) than in a sumptuous reproduction woven ever so cunningly by the artificers of cheerful suburban homes. There is an emptiness and a sinking void in such imitations.

But after all half a loaf is better than no bread. Our baskets no longer represent the rain-cloud, nor do our vases contain gods and goddesses; the former are relegated to the skies whence they long ago drove the latter. Ours is a matter-of-fact time and must ever remain so among the public to whom the Arts and Crafts "artifacts" appeal. In so far, negatively, are they appropriate. Empty, chaste, cold, consciously informal, they suit well the like qualities among ourselves.

As a record for future ethnologists writing of the year 1907, one may be allowed to file the following: "In said year a movement for beautifying the applied arts had extended its influence to the following departments: Basketry, Bookbinding, Ecclesiastical Work, Glassware, Jewelry, Leather Work, Metal Work, Photography, Pottery, Printing and Engraving, Stained Glass, Textiles, and Wood-working."

"Of these, only to speak of a few, the jewelry and pottery showed the result of much strenuous labor both judicious and injudicious; photography was of a medium grade, far removed from the best work of the time, but farther still away from the professional reproductions until then much in vogue; the stained glass showed careful study of models and of modeling, and an earnest spirit of composition. A notable omission seems to have been the attempt to apply art to costume. Considering

the startling opportunities offered for such an experiment by the time and century of the Exhibition, the place where it was held, and the ever-present easy method of trying new ideas on the costumes and persons of those who invent them, it is strange that almost no sign of appreciation of this important department was visible or recorded."

CHARLES PEABODY.

The Indian and Nature. — Looking over a field note-book, I came across the following bits of Indian experience which may throw side-lights on the native's ideas of man's relation to Nature. The Indian's point of view of natural phenomena is so different from our own that any facts are of value which may aid us to appreciate his standpoint. Such facts may also serve our efforts to retrace the long road over which the mind has traveled from the time when Nature was the sole godlike authority issuing mandates and punishing the disobedient; when in the thunder was heard the voice of command, in the lightning was seen the instrument to destroy the offender, to our own age, when Nature is the helper of man and the power manifest in the lightning has become a useful servant.

The following was narrated to me by an old Ponca Indian, many years ago, as part of his own experience:

"When I was a young man, one of my friends went out to fast and pray for a vision. In it the Thunder spoke to him and promised him success. On his return home the young man confided to his father what had happened. His father was troubled, and said, 'My son, the Thunder gods are very exacting, do not have to do with them.' The young man saw that his father was not pleased, and he too was troubled. Then he said to me, 'I will give to you the promise of success that the Thunder gods gave to me.' I agreed. We went out together to a high hill. It was in the spring; the grass was just coming out of the ground. My friend painted my face black with some dark earth and gave me a pipe and bade me hold it toward some clouds that lay at the horizon. I did as he told me, and stood there holding the pipe while the young man walked around me singing the song he had heard in his dream. A thunder storm was seen coming up. We stood there, I holding the pipe, he walking about me singing, both of us watching the approaching black cloud; but it did not come up over us, it passed around. Then my friend said to me: 'The Thunder gods do not want to speak to you. They want only me.' We went home together, and my friend knew that he could not give me to the Thunder gods or let me have the promised

success they had offered him. That summer he was struck by lightning because of what he had done. I never wanted to dream of thunder after that."

This story illustrates certain points in the Indian's belief concerning man's relation and obligation to the power that is manifest in natural phenomena:

1. That a man can come into personal relation with this power through a dream or vision occurring during a fast.

2. That a man may not choose in what aspect or form this power shall approach him in the vision.

3. Nor can he refuse a vision because of the form it presents.

In other words, while a medium of communication between man and the mysterious power within Nature may be established through some form or aspect seen in a vision, the man may not dictate as to the form which shall constitute the medium. The recipient of supernatural favor must be humble and obedient.

In the code of ethics which obtained among the tribes of North America, truthfulness seems to have stood in the front rank of individual and social virtues — literal truth as to words spoken, literal truth as to the fulfilling of a promise given. A man's words and a man's acts must be truthful to the letter.

This literal construction was due in part to tribal life, which was simple rather than complex. All the acts of an Indian, from his birth to his death, were open to observation; his dwelling afforded him no private apartment, no closet, to which he could retire and conceal himself from the ever-present scrutiny of friend or foe. A man's reputation was not based on certain public acts, but was the popular estimate of the sum of all the details of his daily life. Moreover, in the tribe there was no correlation of activities by which one group depended on another group; there was no farmer class to supply the people with food, no manufacturers to provide the material for clothing; not any class whose duty it was to safeguard the community. On the contrary, each family had to provide for itself the necessities of life; the man, by his skill as a hunter, obtained the meat and pelts, and by his vigilance and courage made safe the lives of wife and children; the woman, by her persistent industry conserved the life of the family, she cultivated the garden patch, and transmuted the crude material into food and raiment.

Under such simple conditions when a man gave his word to perform certain acts, there were few contingencies such as arise in a more complex social state — contingencies beyond his personal control that might

prevent or modify the literal fulfilment of his promise. From these individual and social conditions which prevailed in tribal life it seems probable that the prominence given to truthfulness in the ethical code may have been the outgrowth of experience as showing that its practice made for individual and social peace.

The enforcement of truthfulness, however, must have depended on something more fundamental than mere social expediency, nor could truthfulness have taken on a religious aspect from such considerations exclusively. Mill has said, "Only when a morality is understood to come from the gods, do men in general adopt it and lend their human sanctions to its enforcement." The truth of this assertion is borne out in certain religious rites and teachings found among tribes whose social development had not advanced to the stage of coördinated relations — tribes that depended for food and safety on the hunter and the warrior. Yet we find that these tribes had had their seers, men who had thought upon the problems of life and had looked to Nature for instruction. These men thought that they discerned in the observation of natural phenomena authority for certain ethical teachings the practice of which would assist toward the welfare of the tribe. These interpretations came to be accepted by the people and seem to have led to the belief that natural phenomena were the expression of a supernatural power that controlled all things. For instance, among the Omaha tribe of Nebraska, we are told that the person who would fill the priestly office must be a man "whose words never deviate from the path of truth, for Wakonda ['the Great Spirit'] manifests the value placed upon truth in the orderly movements of the heavenly bodies and in recurring day and night, summer and winter."[1] In this quotation we note that truthfulness has been given a religious aspect, and was not only sanctioned by Wakonda, but exemplified in the orderly progression of natural phenomena on which the life of man depended.

From this cosmic teaching of truth, I revert to a story once told me of an individual experience that bears on the same theme.

"Oonumbaha, a member of the Ponca tribe, heard the Thunder gods speak to him as he fasted, and as a sign of what had happened he used to paint a blue spot over one eye of his horse and draw a zigzag line from this eye over the horse's shoulder down to the ankle. One spring day Oonumbaha told the tribe that he had promised to dance the Sun-dance, a ceremony that the Ponca believed to be controlled by the Thunder gods. The tribe went on its usual summer hunt, but the buffalo were scarce, so

[1] La Flesche in *Journal of American Folk-Lore*, XVIII, 272.

the people had to keep moving in search of game, and because of the lack of meat the tribe could not stop long enough in any one place to have the dance. As a result, Oonumbaha could not keep his word, and he expected punishment. In the hope of averting the anger of the Thunder gods, he offered them his painted horse. The gods took the animal; it was struck by lightning. But Oonumbaha could not so escape, for before the summer had passed he was killed by a stroke of lightning." My old informant concluded his narrative by saying: "The gods are inexorable; Oonumbaha's death vindicated the law which forbids a man to break a vow once given."

Instances could be multiplied, all tending to show that the Indian draws his moral teachings from nature and regards coincidences as supernatural expressions of approval or anger. ALICE C. FLETCHER.

An Ojibwa Prayer Ceremony. — During the summer of 1905 I visited the Ojibwa village at Grand Portage, Minnesota, where I found an old chief, Minagunz ('Little Spruce') by name, who still clung to the old traditions of his tribe. The Indians of the village believed him to possess a mysterious power by which he could force them to act according to his will, and also believed that he could bring disaster upon those who offended him. Toward me the old man was most courteous, and at my request he assembled the Indians at his house, promising to give a certain ceremonial dance, which I had been told was still practised in the village.

About thirty Indians responded to his summons. Minagunz sat on the floor at the end of the room and his drum was suspended from the rafter above him. It was a drum which he had made for himself and was about twenty inches in diameter, with two deerskin heads laced together over a hoop about six inches wide. A green star was painted at the top of one side, and below it a cord was stretched close to the head of the drum. The stick used with the drum was cut in the shape of a cross, and as the drum hung before him it was easy to strike it with one of the cross-bars of this stick.

The afternoon progressed, but the Indians gave only the ordinary social dances, so I sent word to Minagunz that I wanted the dance in which the beaver head-dress was worn. He replied that they could not give that dance except for a larger sum of money than I had offered, because such sacred articles were used in it.

The terms were finally arranged and preparations began in earnest.

The eldest son of Minagunz brought a whitened pole about four and a half feet high, set in a board about eight inches square, half of which was painted blue and half white. This board was nailed to the floor in

such a way that the half painted blue was toward the south. The pole was hewn, but made as smooth as possible, and the decorations were with Indian paint. Around the top was painted a blue band about two inches wide, and a few inches below was a band of red ribbon on which was fastened a five-pointed star, the star being toward the east and the ends of the ribbon toward the west. On the top of the pole were downy gray feathers.

Minagunz seemed anxious to have me understand the ceremony and said to the interpreter, "Tell her that we use the pole only at certain times. The pole belongs to God, and when we dance around it we pray to God to let us live."

The eldest son of Minagunz wore a head-dress of beaver-skin — a cap with a broad strip of the fur extending to his waist, decorated with little bows of blue ribbon, a few gilt buttons, and some bits of red braid. A string of bells was tied below his right knee. Most of the men wore a head-dress and band below the right knee, but none were so elaborate as those worn by Minagunz' son.

When all was ready Minagunz called the interpreter again, and said, "Tell her that whenever we put up this pole we make a present, something very nice." His son took a little white box and placed it reverently on the floor at the south of the pole.

Then Minagunz began his song and the pounding of the drum. His son and two other men took their places at the north of the pole and walked slowly around it once, moving clockwise; then they turned their backs to the pole and danced around it. Later the women joined the circle, moving with faces forward while the men continued to dance with their backs to the pole. I was told that this dance was always followed by a feast.

It is worthy of note that the men danced in perfect rhythm, but that it was not always the rhythm given by the drum. No one sang except Minagunz. All the songs which I heard at Grand Portage were based on the pentatonic scale, but I did not attempt to note down the melodies of the ceremonial songs, one of which was in 7–4 time. Whenever triple time was used in either social or ceremonial songs the drum played $3/1' - 3/1' - 3/1' -$, strongly accenting the first count.

A Government employee, who had lived in the village many years and was on most friendly terms with the Indians, told me that he had been allowed to witness this prayer ceremony only once. The entire spirit of the ceremony was reverent and sincere, especially on the part of Minagunz and his family.

FRANCES DENSMORE.

RED WING, MINNESOTA.

Iowa Anthropological Association.—The fourth yearly meeting of the Iowa Anthropological Association was held at the Davenport Academy of Sciences, Davenport, Iowa, May 17 and 18, the sessions being well attended. On the evening of the 17th Professor Frederick Starr, of the University of Chicago, delivered an illustrated address on The Field of Folk-lore in Mexico. On account of his numerous trips to Mexico and his intimate acquaintance with the people of that country, Professor Starr's address was of unusual interest.

On the 18th, after some introductory remarks by the president, Professor B. F. Shambaugh, of the University of Iowa, and the report of the Secretary, J. H. Paarmann, curator of the Davenport Academy of Sciences, there were a number of papers by members of the Davenport Academy of Sciences dealing chiefly with different aspects of the explorations recently made near Albany, Whiteside county, Illinois. These were as follows:

EDWARD K. PUTNAM: Bibliography of the Albany Mounds.

PROFESSOR SAMUEL CALVIN: The Geology of the Region in the Vicinity of Albany.

W. H. KIMBALL: Report of the Survey of the Albany Mound District.

J. H. PAARMANN: Report of the Opening of Two Mounds Near Albany.

DR A. W. ELMER: Iron found in the Albany Mounds.

J. E. CALKINS: Some Puzzles at Albany.

RICHARD HERRMANN: Mound Builders of the Mississippi Valley.

PROFESSOR BOHUMIL SHIMEK: The Loess and the "Nebraska Man."

PROFESSOR C. C. NUTTING: Urn Burial on the Island of Ometepe Nicaragua.

RABBI W. H. FINESCHRIBER: Some Facts of Jewish Anthropology.

PROFESSOR FREDERICK STARR, University of Chicago: The Davenport Academy's Collection of Objects from the Upper Kasai, Congo Free State.

The following officers were elected: *President*, Edward K. Putnam; *Vice-President*, B. Shimek; *Secretary*, J. H. Paarmann; *Treasurer*, A. G. Smith; *Executive Committee*, F. J. Becker, I. A. Loos, G. T. Flom, C. C. Nutting, and A. W. Elmer.

On the evening of the 18th a meeting was held to organize an Iowa branch of the American Folk-Lore Society, the program being as follows:

EDWARD K. PUTNAM: Introductory Remarks on Folk-lore.

PROFESSOR CHARLES BUNDY WILSON: German-American Folk-medicine.

PROFESSOR G. T. FLOM: The Myths of Creation and Doom in Norse Mythology.

PROFESSOR JULES MAURITZON: Traces of Old North Heathenism in Swedish Christmas Customs of To-day.

Professor Charles Bundy Wilson, of the University of Iowa, was elected president and Edward K. Putnam, of Davenport, secretary.

Anthropometric Survey of Great Britain. — It is learned from *Nature* that on March 5 a delegation representing the Anthropological Institute, the British Science Guild, and other scientific bodies, waited on the Prime Minister to urge the establishment of a national anthropometric survey. Mr R. C. Lehmann, M.P., who introduced the deputation, said that, in the first instance, the survey should have for its object the periodic measurement of children and young people in schools and factories. Besides this, a comprehensive survey of the general population of the whole country should be undertaken. The sum asked for is £4,000 or £5,000.

The need for such a survey was described by Dr D. J. Cunningham, Mr J. Gray, Dr Gow, Sir Lauder Brunton, and Dr A. C. Haddon. In his reply to the deputation, Sir Henry Campbell-Bannerman confessed that he has been much impressed by the arguments adduced as to the great lack that there is in this country of knowledge of the quality of the population. It is obviously desirable to have a record of the kind proposed in order to be able to study the changes in the condition of the people at large as a guide to action in administration and in legislation regarding it. Any test applied to the condition of the inhabitants of any district is a test of their surroundings, of the mode in which they live, and the circumstances which effect their health and utility, and therefore this can not be an unimportant thing. It is very desirable to avoid any impression that a sort of experiment is to be practised upon the poor children in the common schools. Whatever is done to the poor ought to be done also to the rich, and the application of the system ought to be universal. In fact, it will cease to have its proper value if it is confined to the poor schools, which are a little more at the disposal of the Government and the authorities than the great schools, such as Westminster and others. Results are wanted referring to the whole population, so that comparison may be made between different districts and different occupations. The sum mentioned for the survey is a modest amount, but a great many modest sums make up a large sum. But the mere question of cost is not likely to stand in the way of a great scheme of this sort if the Government is satisfied on full consideration — which shall be given to it — that the time is ripe for this new enterprise.

Archæological Institute Expedition.—The Committee on American Archæology of the Archæological Institute of America announces a field expedition in southwestern Colorado and southeastern Utah, from June 17th to August 1st, and another to the Jemez plateau in northern New Mexico, August 15th to October 1st. The purpose of these expeditions will be to begin the systematic work of the Institute in the exploration, mapping, and excavation of ruins in those culture areas. They will be in charge of Professor Edgar L. Hewett, the director of American Archæology. A limited number of advanced students will be received as members of these parties and given facilities to participate in the field work of the expeditions as volunteer assistants. Attachés of the parties will be expected to provide their own equipment and pay their proportionate share of camp expenses. Through the courtesy of the Secretary of the Smithsonian Institution the Committee is permitted to announce that the Government excavations at Casa Grande, Arizona, will be resumed about October 1st, and continue through the following winter under the direction of Dr J. Walter Fewkes, and that students under the direction of the Institute will be given opportunities to observe the excavations. The expeditions may be joined at the following places on the dates named:

1. The Colorado-Utah expedition, Monticello, Utah, June 17th, or Bluff, Utah, July 1st. (This work is now in progress.)
2. The New Mexican expedition, Santa Fé, New Mexico, August 15.
3. The Casa Grande work, Casa Grande, Arizona, October 1st.

Students desiring to join one or more of these expeditions should correspond with Professor Hewett, 1333 F st., n. w., Washington, D.C., as early as convenient. Applications must in all cases be accompanied by the recommendation of the professor under whom the applicant has studied.

Two Engraved Shell Disks from Tennessee.—Amongst recent valuable additions to the Carnegie Museum is the extensive collection of North American antiquities made some years ago by Mr Norman Spang of Etna, one of the suburbs of Pittsburgh. Amongst the interesting objects in this collection are two of the typical shell gorgets from Tennessee which were first systematically described and profusely illustrated by Professor W. H. Holmes in his memoir "Art in Shell of the Ancient Americans." Both of these shell disks in the Spang collection show the rattlesnake, and on account of their rare occurrence may deserve to be illustrated here. Some of the rattlesnake gorgets figured by Professor Holmes have been reproduced in various works, as by Cyrus Thomas in the Fifth Annual Report of the Bureau of Ethnology (p. 103), by

Thomas Wilson in his paper on "The Swastika," published in the Report of the National Museum for 1894 (p. 881), and by Hjalmar Stolpe in "Nordamerikansk Ornamentik" (p. 25). The only original illustration of rattlesnake gorget in a later publication, so far as I have been able to ascertain, is that appearing as figure 52 of Warren K. Moorehead's Bulletin III of Phillips Academy, Andover, Mass., 1906.

The specimens here shown (plate XXVIII) were both found in 1880 in a mound at the junction of French Broad and Little Pigeon rivers, 18 miles from Knoxville, eastern Tennessee. Mr Spang's notebook contains no other information concerning them. Both are well preserved and highly polished. C. V. HARTMAN.



FIG. 32—"One of the Wyves of Wyngyno," showing tattooing.

The Virginia Indians.—In an article entitled "The Virginia Indians in the Seventeenth century" (*American Anthropologist*, Jan.–Mar., 1907, p. 57) Mr C. C. Willoughby reproduces drawings of several of the original water-color sketches made by White in 1585 and which are now in the British Museum. One is that bearing the inscription, "One of the Wyves of Wyngyno," which was engraved and used by De Bry as the sixth plate in Hariot's *Virginia*, where it is styled "A younge gentill woeman daughter of Secota."

Referring to this drawing, Mr Willoughby writes: "Tattooing is shown upon the arms and legs only." This is not correct. The illustration accompanying this note is reproduced from a photograph of the original sketch and tattooing is clearly shown on the face. There are two lines of dots across each cheek, three vertical lines on the chin, and a triangular design in the center of the forehead. A band of some sort crosses the forehead; it probably encircled the head.

A photograph of the entire sketch was reproduced by the writer in the *Journal of the Anthropological Institute*, vol. XXXVI, pl. xvii, London, 1906.

D. I. BUSHNELL, JR.





ENGRAVED SHELL DISKS FROM TENNESSEE



A silver trinket found about sixty years ago on a farm in Pike county, Pennsylvania, and carried throughout the Civil War as a pocket-piece, was recently brought to the writer for identification. The owner, Mr Eberly Skinner, of Wayne county, recalls that his father, while plowing, unearthed from under a stone this ornament together with beads and other "relics" evidently indicating an Indian burial. The "gorget" is pierced for suspension at the apex, and at each tip of the crescent, which would have adjusted it nicely to a double-strand necklace. The obverse bears an engraved trilobed decoration and he word "Ratifie"; the reverse is without ornament. The piece would appear to have been a decoration or badge conferred upon some Amerind coming within the circle of French influence. Archæologically the silver gorget is of little interest, being wholly European in origin, but the treaty which it commemorates, though unknown to the writer, should be a matter of Franco-Amerindian history, and, as such, worthy of note and further inquiry.

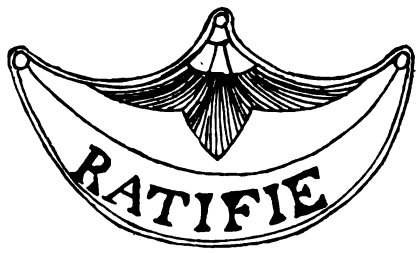


Fig. 33 — Silver trinket from Pennsylvania.

H. NEWELL WARDLE.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.

Dr Pöch's Researches. *The Geographical Journal* states that Dr Rudolf Pöch, who, as assistant physician to the Austrian Plague Expedition in 1897 and 1902, made a name for himself by his malaria researches in West Africa, has in 1904–06, with the aid of the Imperial Academy of Sciences in Vienna, prosecuted anthropological studies in New Guinea, and has also with like purpose visited New South Wales, the Solomon islands, and Bismarck archipelago. In these two years he has traveled along three quarters of the coast of the island of New Guinea. At five spots he stopped for some length of time, and thence wandered into regions of the interior, still in part wholly unknown. The material brought home with him includes 300 measurements of living persons, 15 skeletons, 80 skulls, many anatomical preparations, 1,500 photographs, more than 3,000 feet of cinematograph films (taken by bioscopic camera), representing dances and scenes of village life. Included in the collection are also 90 plates for the phonographic archives of the academy, with a view to the study of the language, songs, and music of the natives, and 2,000 ethnological objects. Itineraries of the hitherto unknown regions were kept and altitudes noted in them.

Paul Edmond Beckwith, of the United States National Museum, died at Washington, June 27. Colonel Beckwith was born in St Louis, September 22, 1848; in 1867–68 he served as an officer in the Pontifical Zouaves of Pius IX, and in 1875–76 as a United States Indian agent. He entered the service of the National Museum in 1886, acting as assistant curator in the division of history until his death. Colonel Beckwith was an authority on numismatics and took a special interest in Indian peace and trade medals. He was a councilor of the Anthropological Society of Washington, a founder of the American Anthropological Association, and a member of several patriotic organizations. In addition to a number of manuscript works, Colonel Beckwith was the author of *The Creoles of St Louis* and *The Beckwiths*.

P. S. Sparkman. — News has been received of the murder of Mr Philip S. Sparkman, at Rincon, California, about May 24. Mr Sparkman was a member of the American Anthropological Association and an ardent student of the Luiseño language, on the subject of which he presented a paper to this journal for October–December, 1905. It is understood that Mr Sparkman left a large body of manuscript linguistic material, which should properly find its way to the University of California.

THE THIRD STATE ASSEMBLY of the Wisconsin Archeological Society was held at Beloit, Wis., on June 15, when addresses were delivered by Mr W. H. Ellsworth, president of the Society, and by Dr Frederick Starr of the University of Chicago and others. Beloit College, which claims the distinction of being the only institution in Wisconsin offering a course in American archeology, has in its Logan Museum a collection of about 15,000 archeological objects, including an interesting collection from cliff-dwellings of Arizona. The Wisconsin Archeological Society has made an appeal for the sum of three hundred dollars for the purchase and parking of a tract, consisting of an acre and a half, lying about four and a half miles northeast of Baraboo, on which the famous Man Mound is situated. The enterprise is a worthy one and it is hoped that the friends of the Society will afford the necessary means for the preservation of this important monument.

ASSISTANT PROFESSOR GEORGE A. REISNER, now on leave of absence from Harvard University during archeological investigations in Palestine and Egypt, has been appointed by the Egyptian government archeologist-in-charge of the government excavations which are being commenced in the Nile valley to the south of Aswan. The work will consist essentially in carrying out the excavations necessary to insure the thorough

subterranean examination of that portion of the territory which will be submerged by the Aswan reservoir when at its full height of 113 meters above sea level.

AT THE annual meeting of the Anthropological Society of Washington, on May 29, the following officers were elected for the next official year: President, Ales Hrdlicka; Vice-presidents, D. S. Lamb, J. Walter Fewkes, W. H. Holmes, Walter Hough, James Mooney, J. N. B. Hewitt, and Alice C. Fletcher; General Secretary, Walter Hough; Councilors, J. N. B. Hewitt, F. W. Hodge, John R. Swanton, George M. Kober, J. B. Nichols, W. E. Safford, Sarah S. James, and Paul E. Beckwith.

AT A MEETING of the California Branch of the American Folk-Lore Society held at South Hall of the University of California, Berkeley, on the evening of March 20, Professor F. B. Dresslar, associate professor of education in the University, spoke on Current Superstitions. At the meeting held April 23d Professor W. F. Badè of the Pacific Theological Seminary delivered an address on Babylonian and Other Old Semitic Elements in Modern Customs and Superstitions.

DR WALTER E. ROTH is now established at Pomeroon River, British Guiana, where he will remain probably for three years. At present Dr Roth is engaged in completing his series of bulletins on North Queensland ethnography, of which only three of the nineteen remain to be finished. He will next engage in a study of the tribes of British Guiana, which are rapidly losing much of their primitive character.

ON THE MAP of the "Middletown quadrangle" of Ohio, prepared from surveys made by the United States Geological Survey in 1905–06, in coöperation with the State of Ohio, the Indian mounds lying within the area are located. This will prove to be a valuable feature of the topographical maps of Ohio, and it is hoped will be incorporated in the maps of other states in the Mississippi valley.

Under the will of the late Mrs Eliza Orne Ropes, of Salem, Mass., Harvard University will receive a bequest to endow a professorship of political economy. If, after the endowment of the professorship, any surplus remains, it will go to the Peabody Museum of American Archæology and Ethnology.

THE NEXT MEETING of the Congrès préhistorique de France will be held at Autun (Saône-et-Loire) from the 12th to the 18th of August inclusive. Dr A. Guébhart is president, and Dr Marcel Baudouin (rue Linné, 21, Paris) secretary of the committee of organization.

ANNOUNCEMENT has been made of the death, on May 25, of Dr Johann Gebauer, professor of Slavic philology in the Königlich Böhmische Karl-Ferdinandaeischen Universität at Prag, and vice-president of the Königlich Böhmische Gesellschaft der Wissenschaften.

IN A recent letter to *Science*, addressed in response to a request for information on this subject, Mr Albert B. Reagan reports the finding of five left-handed Indians (four males, one female) in a total population of 231, among the Hoh and Quileute tribes of Washington.

PROFESSOR HERMANN VON IHERING, director of the Museo Paulista, São Paulo, Brazil, will represent the museum at several scientific conferences to be held this year in Europe. During his absence Mr Rodolpho von Ihering will have charge of the museum.

ON THE OCCASION of the celebration of the seventy-fifth anniversary of Lafayette College, the degree of doctor of science was conferred on Dr Frederick Starr, associate professor of anthropology in the University of Chicago.

DR ALBERT ERNEST JENKS, of the University of Minnesota, during July gave a week's public lectures on anthropological subjects at the summer schools of both the University of Minnesota and Humboldt College, Iowa.

THE Weld Hall of Ethnology of the Peabody Academy of Science, Salem, Mass., was opened on the evening of June 26, when an address was made by Dr Edward S. Morse, director of the Academy.

DR GEORGE B. GORDON, of the Free Museum of Science and Art of the University of Pennsylvania, has started for Alaska to make ethnological studies and collections.

PROFESSOR ARTHUR BAESSLER, known for his work on the archeology of Peru and for his collections from that country given to the Berlin Museum, died on March 31.

PROFESSOR C. H. HAWES, of Cambridge University, has been appointed lecturer in anthropology in the University of Wisconsin.

PRINCE ROLAND BONAPARTE has been elected a member of the Paris Academy of Sciences *vice* M. Bischoffsheim, deceased.

DR HERMANN KLAATSCH has been appointed associate professor of ethnology in the University of Breslau.

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NEW SERIES

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HEREDITY IN ANTHROPOMETRIC TRAITS

BY FRANZ BOAS

A number of years ago I published the results of a study of heredity in head form which was based on material that Dr Maurice Fishberg had the great kindness to collect for me among the Russian Jews of New York City.[1] The results seemed sufficiently interesting to justify a continuation of the work. This has been made possible by a grant from the Esther Herrman Fund of the Scientific Alliance of New York. While my first report was based on observations on 48 families, I have been able, through the kind assistance of Dr Fishberg and Mr Joseph Fish, to collect data relating to 192 families. The extended calculations were made by Dr A. B. Lewis.

All the families from which measurements were collected were East European Jews, and almost all of them Russian Jews. I have confined myself to gathering measurements of length and width of head. Only in the first series of 48 families was the width of face also observed. The principal question that I have had to investigate is, whether there is a tendency in offspring to group themselves around the middle value of the parents (Galton's midparent), or whether they rather tend to revert to either the paternal or the maternal type. I have shown in a previous paper that in regard to some head measurements the latter tendency is found in the mixture of American Indian and of White blood,[2] and the preliminary investigation tended to show that in the intraracial marriages of Russian Jews the same tendency prevailed. It seemed, however, necessary to base this conclusion on more extensive material.

[1] Heredity in Head Form, *American Anthropologist*, N. S., 1903, V, pp. 530–538.

[2] *Verhandlungen der Berliner anthropologischen Gesellschaft*, 1895, pp. 406–409; *Popular Science Monthly*, October, 1894, pp. 761–770.

The series at my disposal has been measured partly by Dr Fishberg (I), partly by Mr Fish (II), partly — for the sake of obtaining uniformity — by the two observers jointly (III). It seems, therefore, necessary to show in how far the three series are comparable. The following table gives the results of these comparisons:

	Males, 21 years and more			*Females, 19 years and more*		
			LENGTH OF HEAD			
Series	Average	Variability	No. of Cases	Average	Variability	No. of Cases
I	188.7	± 6.4	57	181.9	± 6.2	54
II	189.2	± 5.7	82	182.6	± 6.1	84
III	188.6	± 6.0	80	180.5	± 4.5	79
Total	188.9	± 6.0	219	181.7	± 5.7	217
			WIDTH OF HEAD			
I	153.0	± 5.3	57	150.1	± 5.0	54
II	155.5	± 4.7	82	149.8	± 5.5	84
III	154.4	± 4.7	80	150.3	± 4.7	79
Total	154.5	± 5.0	219	150.0	± 5.1	217
			CEPHALIC INDEX			
I	81.3	± 3.0	57	82.6	± 3.2	54
II	82.2	± 2.5	82	82.0	± 3.3	84
III	82.0	± 3.5	80	83.3	± 2.6	79
Total	81.9	± 3.1	219	82.7	± 3.1	217

It will be seen that none of these results shows individual differences that are not adequately explained by accidental variation of the group investigated.

I have examined the same question by having the calculation made of the correlation of length and width of head in individuals, and of correlation of cephalic index of parents and children and of brothers and sisters. The following table gives the results of this calculation:

Index of Correlation of Length and Width of Head

	Males, 21 years and more			*Females, 19 years and more*		
Series	r	Error	n	r	Error	n
I	0.40	± 0.10	57	0.36	± 0.12	54
II	0.52	± 0.08	82	0.37	± 0.10	84
III	0.03	± 0.11	80	0.45	± 0.09	79
Total	0.31	± 0.06	219	0.39	± 0.06	217

Index of Correlation of Cephalic Index of

	Fathers and Children			*Mothers and Children*			*Brothers and Sisters*		
Series	r	Error	n	r	Error	n	r	Error	n
I	0.29	± 0.07	158	0.27	± 0.06	158	0.23	± 0.06	157
II	0.19	± 0.06	266	0.16	± 0.06	266	0.46	± 0.05	258
III	0.15	± 0.07	201	0.34	± 0.07	209	0.50	± 0.05	199
Total	0.20	± 0.04	625	0.25	± 0.04	633	0.42	± 0.03	614

On the whole the differences of these values do not exceed chance deviations. There might be some doubt regarding the correlation of length and width of head of males in series III, but the peculiar anomaly that occurs in this case does not recur in other measurements of the same kind.

In order to make sure that preconceived notions of the observers had no effect upon the results, I had all the head measurements reduced to adult values. Since the total amount of growth of the diameter of the head after the first few years of life is slight, it seemed justifiable to make this reduction, for which I have utilized the averages given by G. M. West.[1]

Index of Correlation of Length of Head of

	Fathers and Sons		*Fathers and Daughters*		*Mothers and Sons*		*Mothers and Daughters*	
Series	r	n	r	n	r	n	r	n
I	0.10	80	0.06	53	—0.01	80	0.53	53
II	0.33	98	0.54	113	0.37	98	0.39	113
III	0.27	91	0.23	82	0.20	95	0.52	86
Total	0.24	269	0.34	248	0.20	273	0.46	252

Index of Correlation of Width of Head of

	Fathers and Sons		*Fathers and Daughters*		*Mothers and Sons*		*Mothers and Daughters*	
Series	r	n	r	n	r	n	r	n
I	0.32	80	0.31	53	0.50	80	0.22	53
II	0.30	98	0.18	113	0.40	98	0.24	113
III	0.01	91	0.24	82	0.12	95	0.33	86
Total	0.21	269	0.23	248	0.33	273	0.27	252

The average of the index of correlation for length of head of parents and children is 0.31, for width of head of parents and children 0.26; values comparable to those found for the cephalic index. The differences of the individual values seem rather large, but they are distributed quite irregularly.

These values may also be compared with the correlations obtained from the measurements of 150 pairs of brothers and sisters measured in the public schools of Worcester, Mass.[2] The deviations

[1] Antropometrische Untersuchungen über die Schulkinder in Worcester, Mass., *Archiv für Anthropologie*, 1893, XXII, 13–18.

[2] Franz Boas and Clark Wissler: Statistics of Growth, *Report of the U. S. Commissioner of Education for 1904*, Washington, 1905, pp. 125–128.

of stature and weight were determined as multiples of standard deviations. This made it possible to compare children of different ages.

Index of Correlation of Brothers and Sisters

	Worcester, Mass.	*Russian Jews*
Stature	0.42	—
Weight	0.31	—
Length of Head	0.54	0.37
Width of Head	0.55	0.36
Cephalic Index[1]	0.50	0.42

All these indices are somewhat smaller for the Russian Jews than for the children in Worcester. If these differences are significant they must not necessarily be explained by greater errors in the series of Jews, but they may perhaps be due to the greater dishomogeneity of the Worcester material. Provided a considerable number of distinct types are represented in this series, brothers and sisters of each type would be more likely to differ in the same direction from the general average than in a homogeneous series. For correlations in each individual the Worcester series of 300 individuals, constituting all the brothers and sisters, gives

for stature and length of head	0.42
for stature and width of head	0.21
for length and width of head	0.25

For the last of these values the Russian Jews give a coëfficient of 0.35, a value that seems rather high, but which is quite in accord with the uniformity of the series.

It seems remarkable that in the series of Worcester children the correlation of stature is as great as that obtained by Galton in his series of adult brothers and sisters.

The general traits of the series of Russian Jews are contained in the table on next page.

In discussing the occurrence or nonoccurrence of alternating heredity, the same method must be followed which I developed in my previous paper, but a few additions to the theory seem desirable. In my former communication I calculated the variability of the children in each family. It seems possible to determine this value with greater accuracy than I had done before If the deviation of

[1] Average: 79.3 ± 3.3

	Length of Head				*Width of Head*			
	Male		*Female*		*Male*		*Female*	
Age	mm	n	mm	n	mm	n	mm	n
1	158.3	3	———		128.6	3	———	
2	164.6	13	161.8	14	140.1	13	135.4	14
3	168.6	16	164.1	21	140.2	16	135.0	21
4	169.9	19	168.1	18	142.8	19	141.8	18
5	171.2	24	168.2	14	143.6	24	141.0	14
6	172.0	26	168.5	26	144.1	26	143.0	26
7	170.8	22	170.3	22	145.5	22	142.1	22
8	174.4	18	172.4	26	145.2	18	143.2	26
9	176.5	15	169.9	19	145.5	15	144.5	19
10	179.5	18	174.2	19	147.4	18	145.3	19
11	177.1	22	175.4	11	146.5	22	144.6	11
12	178.3	18	176.5	21	148.4	19	146.4	21
13	178.7	20	179.8	12	150.0	20	147.8	12
14	182.3	9	178.7	17	149.2	11	147.0	17
15	182.3	9	178.9	7	149.3	9	148.6	7
16	185.0	14	177.2	10	152.0	14	150.2	10
17	186.9	11	177.7	9	153.1	11	148.3	9
18	190.4	5	182.7	13	153.6	5	148.9	13
19	186.6	9			156.7	9		
20	190.1	7	181.7	217	155.3	7	150.0	217
21	188.9	219			154.5	219		

The cephalic index decreases slightly with age:

Age	*Males*	*Females*
1–4	83.6	83.6
5–9	83.8	84.0
10–14	83.1	82.7
15–19	82.6	83.4
20+	81.9	82.7

any particular child from the general average of children be called x, the deviations of the children of a family of n children $x_1, x_2, \cdots x_n$; the coëfficient of correlation between children of the same family r_c; and the variability of children of a family around their mean s_n^2:

$$s_n^2 = \frac{1}{n}\Sigma\left(x - \frac{\Sigma x}{n}\right)^2 = \frac{1}{n}\left\{\Sigma x^2 - \left(\frac{\Sigma x}{n}\right)^2\right\} = \frac{(n-1)\Sigma x^2 - \Sigma x_p x_q}{n^2}.$$

On the average, the variability of a family of n children will be, therefore, if σ designates the standard variability of the whole series,

$$[s_n^2] = \sigma^2\frac{n(n-1) - n(n-1)r_c}{n^2} = \sigma^2(1 - r_c)\frac{n-1}{n}.$$

It seems also desirable to determine the coëfficient of correlation of children of each family of n children, each family being taken as a separate unit.

The product P of the deviations of brothers and sisters of the same family,

$$P_n = \frac{1}{n(n-1)} \Sigma \left(x_p - \frac{\Sigma x}{n} \right) \left(x_q - \frac{\Sigma x}{n} \right)$$

$$= \frac{1}{n(n-1)} \left\{ \Sigma x_p x_q - n(n-1) \left(\frac{\Sigma x}{n} \right)^2 \right\}$$

$$= -\frac{1}{n-1} \frac{(n-1)\Sigma x^2 - \Sigma x_p x_q}{n^2} = -\frac{1}{n-1} s_n^2.$$

It follows that the coëfficient of correlation of children of families of n children, each family treated as a unit, will be

$$r_n = \frac{P_n}{s_n^2} = -\frac{1}{n-1}.$$

Provided the parents show no difference among themselves, so that the separate influence of father and mother may be neglected, the value $[s_n^2]$ represents the variability of the children of a family with n children. For the series of observations on the cephalic index $\sigma^2 = 9.61$, $r_c = 0.42$, and the average number of children observed in each family is about 3.5 ; therefore

$$\sigma^2(1 - r_c)\frac{n-1}{n} = 3.9.$$

Observations of the variability for 86 children whose parents differ in regard to their cephalic index by less than 1% gives

$$\sigma^2 = 3.8,$$

a very satisfactory agreement with the theoretical value.

When we take into consideration the influence of father and mother, it can easily be shown that, according to the theory that the children vary around the midparental value, no influence upon the variability of one family should be exerted by the amount of difference of the parents. If the deviations of the parents are called x and y, each child's deviation may be represented by

$$z = r_{yx}(x + y) + \xi,$$

and each difference from the average of all the children of the family

$$z_1 - \frac{z_1 + z_2 + \cdots + z_n}{n} = \xi - \frac{\xi_1 + \xi_2 + \cdots + \xi_n}{n},$$

so that the values x and y disappear. Hence, according to this theory the variability of children of one family measured from the family average will not be influenced by the difference of the parents.

If we assume that one half of the children resemble the father, one-half the mother, the former group will be represented by the type

$$r'_{pc}x + \xi - \frac{\frac{n}{2}r'_{pc}x + \Sigma\xi + \frac{n}{2}r'_{pc}y + \Sigma\eta}{n} = r'_{pc}\frac{x-y}{2} + \xi - \frac{\Sigma(\xi+\eta)}{n};$$

and in the same way the latter group will be represented by the value

$$-r'_{pc}\frac{x-y}{2} + \eta - \frac{\Sigma(\xi+\eta)}{n}.$$

The mean square variability of this value will therefore increase for increasing values of $(x-y)$ by the amounts

$$r'^{2}_{pc}\frac{(x-y)^2}{4}.$$

It has been shown in my previous paper [1] that

$$r'_{pc} = 2r_{pc}.$$

In our series $r_{pc} = 0.22$. Thus a series of theoretical values for the variabilities of children can be calculated. The following table gives the variabilities according to observations and according to theory:

Difference of Parents, $x-y$	*Cases*	*Observed Variability*	*Theoretical Variability*
0.0 — 0.9	86	3.80	3.8
1.0 — 1.9	141	3.38	3.9
2.0 — 2.9	79	5.11	4.1
3.0 — 3.9	90	3.30	4.4
4.0 — 4.9	71	4.20	4.8
5.0 — 5.9	43	3.81	5.3
6.0 — 6.9	28	4.54	5.9
7.0 — 7.9	15	6.26	6.4
8.0 — 8.9	32	8.45	7.4
>9.0	21	16.86	9.2

[1] Loc. cit. 2, 2*, 2**, p. 534.

Unfortunately the number of observations for the greater differences being very few, no great accuracy for these variabilities can be expected. Still, the very rapid increase with increasing differences is obvious, so that it appears that the assumption of a midparental type is not tenable. Apparently the increase in variability is first slighter, then greater, than our theory demands; but the numerical values are too uncertain to allow a further theoretical discussion that might account for the characteristics of these values. It may, however, be pointed out that with the increase of differences of parents, the frequency of considerable differences in the measurements of the grandparents must materially increase. Hence, in case the same alternative inheritance of grandparental traits exists, the variability of the offspring of parents differing in type will be further increased.

It seemed desirable to test these results by a different arrangement of the material which will bring other individuals and families near the extreme end of the series. This may be done by considering only the effect of the deviation of a single parent from the average.

If we consider, as before, each child as correlated to its parents, we have

$$z = r_{pc}(x + y) + \xi,$$

and [1]

$$[z^2] = r_{pc}^2[(x + y)^2] + \sigma^2(1 - 2r_{pc}^2).$$

For a constant value of x and variable values of y, this variability assumed the value

$$[z_x^2] = r_{pc}^2(x^2 + \sigma^2) + \sigma^2(1 - 2r_{pc}^2) = r_{pc}^2x^2 + \sigma^2(1 - r_{pc}^2).$$

If, on the other hand, we assume the case of alternating inheritance, we have

$$[z'^2] = \tfrac{1}{2}(r'_{pc}x + \xi)^2 + \tfrac{1}{2}(r'_{pc}y + \eta)^2 = \tfrac{1}{2}r'^2_{pc}(x^2 + y^2) + \sigma^2(1 - r'^2_{pc}),$$

and for a constant value of x and variable values of y

$$[z_x^2] = \tfrac{1}{2}r'^2_{pc}(x^2 + \sigma^2) + \sigma^2(1 - r'^2_{pc}) = \tfrac{1}{2}r'^2_{pc}x^2 + \sigma^2(1 - \tfrac{1}{2}r'^2_{pc});$$

and, since

$$r'_{pc} = 2r_{pc}, \quad [z_x^2] = 2r_{pc}^2x^2 + \sigma^2(1 - 2r_{pc}^2).$$

[1] Loc. cit. 7*, p. 536.

Applying these two formulas, we obtain the following observed and theoretical results for variabilities of children of families in which one parent has a definite deviation from the general average:

Deviation of One of Parents from Average	*Number of Cases*	*Variability*		
		Observation	*Theory*	
			Midparent	*Alternating Inheritance* ($r=0.4$)
0.0—0.9	335	9.2	9.1	6.5
1.0—1.9	232	11.4	9.2	7.1
2.0—2.9	225	11.2	9.4	8.5
3.0—3.9	131	8.1	9.7	10.5
4.0—4.9	149	10.9	10.1	13.1
5.0—5.9	77	17.1	10.6	16.5
6.0—6.9	33	15.5	11.2	20.5
7.0 and more	32	24.6	11.9	26.2

Neither of these theories gives satisfactory results. For slight differences the midparental theory gives the better results, for great differences the alternating inheritance gives the better values. No change in the value of r can make the theoretical values increase with sufficient rapidity to give satisfactory results for great differences. On the other hand the theoretical values obtained for alternating inheritance are too small, when the differences of the parents from the average are small. Provided we assume that there is also a tendency of reversion to ancestral types more remote than the parents, this difficulty may be overcome. In the extreme case of some individuals reverting to the racial type as represented by the whole ancestral series, their presence will increase the variabilities for those families in which one parent is near the average, while in those in which one parent is remote from the average, the variability will be decreased.

Our series justifies, therefore, the conclusion that the cephalic index shows alternating inheritance, largely reversion to the type of father and mother, but also to more remote ancestral types.

It is important to note that this alternating inheritance appears much less distinctly, if at all, in the absolute measurement of length and width of head. Both have been tabulated in the same way as the cephalic index.

Difference of Parents	*Number of Cases*	*Length of Head* [x^2]	*Number of Cases*	*Width of Head* [x^2]
0	26	14.2	24	17.9
1	38	9.3	41	5.0
2	21	18.3	60	6.9
3	58	14.6	31	14.5
4	48	14.7	56	10.0
5	33	10.0	37	14.7
6	19	17.0	46	11.6
7	57	17.4	29	11.4
8	24	42.7	18	8.6
9	14	33.5	34	16.0
10	27	14.5	33	11.9
11	18	17.7	18	8.0
12	18	6.2	14	12 8
13	19	12.4	17	15.5
14	12	14.8	19	5.0
15	18	7.6		
16-21	26	22.9		

It will be seen that these differences are so irregularly distributed that they may very well be considered as representing the same average.

When we group the same material in such a manner that we select families with one parent having a certain deviation, the number of cases becomes somewhat larger, and we find:

Deviation of One of Parents from Average	Length of Head				Width of Head			
	Number of Cases	Variability			Number of Cases	Variability		
		Observation	Midparent	Alternating Inheritance		Observation	Midparent	Alternating Inheritance
0 and 1	216	35.1	34.0	31.8	243	22.1	23.5	22.1
2 " 3	274	27.1	34.5	32.8	217	20.2	24.0	23.1
4 " 5	149	35.6	35.6	34.8	218	21.2	25.0	25.1
6 " 7	110	38.1	37.0	37.8	154	24.5	26.0	28.0
8 " 9	90	39.0	39.0	40.5	67	30.9	28.5	31.8
10 " 11	57	33.4	41.0	46.1	55	44.1	30.5	36.4
12 " more	58	50.5	45.0	54.1				

It is hardly possible to say in this case which theory gives the better fit. For width of head the midparental theory seems to give too slight an increase of variability. More material is required to solve this problem. In the case of stature it has been found that in mixed types the stature does not revert to the parental types.[1]

The following tables contain the material on which the preceding discussion is based.

[1] *Verhandlungen der Berliner anthropologischen Gesellschaft*, 1895, pp. 381–386.

[1]

		Age	L	W	F
1	F	40	189	157	134
	M	38	179	158	142
	D	14	184	154	129
	D	12	173	146	118
	S	10	181	160	128
	D	8	169	145	117
2	F	57	190	148	131
	M	48	162	145	119
	S	20	199	154	136
	D	17	166	145	120
	D	14	176	141	108
	S	9	179	141	112
	S	7	175	145	113
	S	5	174	146	110
3	F	27	176	153	136
	M	24	183	157	130
	S	6	169	146	98
	D	4	170	145	102
4	F	38	184	150	143
	M	28	185	150	130
	S	11	183	152	137
	D	9	172	146	114
	S	6	177	145	108
5	F	49	185	153	147
	M	48	182	146	131
	S	19	178	153	136
	S	17	189	153	138
	D	12	178	144	126
	D	8	177	145	114
6	F	28	183	151	139
	M	25	179	150	132
	S	6	168	145	124
	D	3	169	141	102
7	F	63	192	157	124
	M	60	179	154	132
	S	21	193	155	130
	D	29	196	156	135
	S	27	192	160	135
8	F	38	187	152	130
	M	39	193	155	135
	S	16	190	155	136
	D	14	182	153	125
	D	11	183	156	109
9	F	34	192	161	148
	M	31	192	145	133
	S	13	174	151	129
	S	11	180	143	122
	D	8	167	145	118
10	F	42	203	158	141
	M	39	186	152	134
	S	18	192	155	135
	S	16	181	152	136
	D	14	182	149	131
	D	10	169	146	128
	S	5	169	147	110
11	F	39	196	146	138
	M	38	181	156	141
	S	17	166	145	139
	D	15	181	141	129
	D	12	166	142	139
	S	8	187	143	129
12	F	33	186	150	142
	M	32	191	156	144
	D	15	183	147	130
	S	11	184	151	136
13	F	68	185	153	138
	M	65	181	147	129
	S	28	187	151	140
	S	23	186	147	136
	D	19	183	144	131
14	F	29	184	147	135
	M	28	194	151	131
	D	8	190	140	118
	D	6	176	141	115
	S	4	171	138	110
15	F	63	179	154	136
	M	53	185	141	116
	D	19	170	147	121
	D	17	181	157	138
	S	14	(?)	146	123
	D	12	170	144	119
	S	10	188	143	113
	S	8	178	134	112
16	F	36	197	161	146
	M	34	182	153	123
	S	10	181	147	120
	S	8	167	149	108
	D	6	178	143	98
17	F	38	180	145	128
	M	37	181	145	122
	D	12	165	136	106
	S	10	182	149	120
	S	9	175	140	102
	D	6	170	137	110
	D	4	177	142	103
18	F	40	200	161	132
	M	36	180	147	126
	S	13	181	159	132
	D	10	178	141	108
19	F	65	187	155	133
	M	58	183	152	128
	D	33	189	152	138
	S	30	190	158	134
	S	26	188	159	130
	S	19	181	152	126
	S	17	185	151	122
20	F	56	191	149	135
	M	40	179	154	130
	S	17	182	157	132
	D	16	174	143	118
	S	13	172	—	122
21	F	32	196	153	143
	M	30	181	155	143
	S	8	172	146	120
	S	4	173	141	114
22	F	38	181	150	136
	M	37	185	148	126
	S	14	175	148	119
	D	8	173	144	112
	S	4	168	141	113
23	F	33	192	153	139
	M	32	178	149	128
	D	7	178	147	115
	S	5	169	142	114
	D	3	174	140	—
24	F	30	181	142	138
	M	28	192	161	137
	D	3	151	120	101
	D	1	153	121	91
25	F	53	205	153	141
	M	36	182	151	142
	S	11	184	148	121
	S	10	189	144	118
	S[2]	7	174	150	118
	S[2]	7	176	147	119
	S	3	171	148	121
26	F	37	177	144	122
	M	40	177	152	128
	S	13	179	141	118
	S	11	182	144	121
	S	8	178	148	116
	D	6	174	142	115
27	F	34	184	153	131
	M	33	188	151	138
	S	12	179	148	123
	S	9	181	138	116
	D	7	172	138	106
	D	3	171	141	—
28	F	30	193	149	120
	M	28	186	150	—
	S	13	182	146	107
	S	11	179	142	98
	S	10	175	139	95

[1] *F* Father. *M* Mother. *S* Son. *D* Daughter. *L* Length of Head. *W* Width of Head. *F* Width of Face. [2] Twins.

I—*Continued*

		Age	L.	W	F
29	F	37	192	151	137
	M	31	179	145	128
	D	12	178	141	161
	S	9	181	146	115
	D	8	161	136	110
	S	5	172	148	118
30	F	50	194	142	121
	M	36	179	139	118
	S	18	186	140	115
	S	14	182	139	119
31	F	35	188	153	139
	M	30	180	144	130
	D	5	172	141	115
	D	3	160	133	107
32	F	54	192	157	138
	M	36	176	145	129
	S	8	174	142	117
	D	7	164	139	114
33	F	60	196	158	136
	M	38	177	145	123
	D	12	181	151	121
	S	9	183	148	115
34	F	29	189	153	141
	M	30	187	156	131
	S	6	179	151	130
35	F	40	176	144	129
	M	45	184	155	136
	S	17	185	158	144
	S	10	178	157	132
36	F	45	188	162	130
	M	38	170	153	123
	S	6	160	134	117
	D	4	158	138	97
	D	3	161	132	105
	S	1	159	130	98
37	F	38	183	155	120
	M	32	171	149	102
	D	9	169	143	119
	D	6	165	143	115
	S	4	166	143	118
38	F	36	184	163	141
	M	40	181	154	131
	S	10	171	148	119
	S	7	166	142	114
	D	5	173	142	115
39	F	32	191	159	134
	M	30	190	159	129
	S	5	176	152	116
	D	2	161	137	106
40	F	29	181	153	139
	M	29	175	145	133
	S	7	170	141	112
	D	5	168	142	104
	S	3	169	141	96
41	F	40	187	155	130
	M	32	185	151	134
	S	16	186	153	134
	S	11	176	140	118
	D	7	169	139	104
	S	2	163	134	98
42	F	39	184	152	137
	M	36	180	142	131
	S	14	183	149	122
	S	12	184	154	124
	D	9	163	140	103
	D	7	175	141	105
	D	4	173	140	99
	S	2	172	143	—
43	F	34	196	150	132
	M	33	186	144	122
	D	12	177	139	106
	S	10	176	136	99
	S	6	168	135	101
	D	3	161	125	97
44	F	46	197	163	140
	M	41	179	149	124
	D	19	181	148	125
	S	13	183	150	122
	D	11	177	143	—
	D	7	169	138	—
	S	2	151	130	—
45	F	25	189	157	136
	M	24	179	158	138
	S	6	174	151	118
	D	4	139	124	—
46	F	48	196	154	144
	M	34	174	144	128
	S	16	182	142	142
	S	14	179	147	121
	D	10	171	148	99
	S	8	165	141	97
47	F	37	187	158	128
	M	39	181	154	133
	D	13	176	151	115
	D	11	175	149	101
	S	7	169	141	92
48	F	73	188	145	139
	M	69	182	147	133
	S	35	192	156	141
	S	32	182	146	137
	D	25	184	153	134
	S	21	185	149	140

II

		Age	L.	W
49	F	40	190	153
	M	40	190	151
	S	19	191	157
	D	18	192	151
	D	16	189	154
	D	12	183	150
	D	8	180	145
	D	6	176	146
	S	4	178	145
50	F	55	186	152
	M	40	183	152
	S	21	181	159
	S	19	192	160
	S	16	180	150
	D	13	173	148
	S	12	178	150
	S	9	180	145
	S	6	165	145
	S	2	165	138
51	F	48	190	150
	M	40	171	140
	D	20	176	147
	D	14	177	147
	S	12	177	149
	S	8	169	141
52	F	—	180	152
	M		176	148
	S	11	163	137
	S	9	167	145
	S	8	171	145
	S	7	175	152
53	F	37	186	151
	M	36	186	154
	S	15	171	138
	S	7	167	140
54	F	45	186	150
	M	42	180	156
	D	18	178	146
	S	16	182	151
	D	13	177	138
	D	11	174	145

II—*Continued*

		Age	L	W
	S	10	180	147
	D	9	170	145
	D	6	165	138
55	F	34	190	161
	M	30	186	145
	S	15	187	153
	D	10	176	145
	D	8	180	143
	D	6	175	139
	D	3	170	130
	S	1	161	129
56	F	52	188	157
	M	49	181	155
	S	19	186	160
	S	15	176	155
	D	12	179	152
	D	9	166	146
57	F	52	182	153
	M	49	187	159
	D	16	174	156
	S	13	178	158
	S	11	173	157
	D	6	158	145
58	F	50	200	153
	M	49	180	154
	D	24	190	155
	S	20	195	164
	D	12	184	151
59	F	35	193	165
	M	28	181	146
	D	9	175	147
	D	8	172	141
60	F	32	185	156
	M	26	174	138
	D	7	160	140
	S[1]	4	166	136
	S[1]	4	175	148
61	F	45	187	155
	M	42	190	157
	D	20	183	157
	D	16	180	154
	S	10	183	151
	S	8	181	149
	D	4	169	155
62	F	32	190	160
	M	29	193	153
	D	5	172	141
	S	3	171	139
63	F	27	195	165
	M	28	180	141
	S	5	174	140
64	F	31	186	158
	M	27	175	146
	D	7	170	151
	S	4	170	150
65	F	25	182	151
	M	20	172	145
	S	6	170	141
66	F	27	189	159
	M	25	174	140
	S	5	169	140
	S	3	156	134
67	F	39	180	145
	M	41	185	154
	S	11	181	148
	D	7	172	146
	D	5	165	140
68	F	27	195	160
	M	25	182	150
	S	5	170	146
	S	3	170	142
69	F	24	194	158
	M	22	192	156
	D	6	168	145
	D	4	161	145
	D	2	160	142
70	F	43	181	154
	M	38	172	155
	D	6	168	135
	D	3	162	130
71	F	40	190	152
	M	38	184	161
	D	12	175	145
	D	11	170	135
	D	9	172	148
	S	5	175	145
72	F	40	203	160
	M	40	186	143
	S	21	198	155
	D	18	190	145
	D	15	185	153
	D	13	190	151
	S	12	181	146
	D	10	184	148
	D	7	178	146
	D	4	169	137
73	F	31	188	148
	M	30	185	147
	S	11	177	143
	S	2	175	134
74	F	27	188	154
	M	26	175	146
	S	5	167	147
75	F	25	191	149
	M	28	186	152
	S	2	160	140
76	F	35	193	165
	M	34	188	148
	S	14	190	162
	S	12	185	153
	S	7	165	147
	D	2	168	140
77	F	40	189	150
	M	36	180	140
	D[1]	15	165	140
	S[1]	15	173	144
	S	12	175	142
	S	9	165	143
78	F	34	184	145
	M	26	175	145
	S	5	156	130
	S	3	164	134
79	F	38	188	154
	M	36	181	141
	S	19	186	151
	D	14	175	138
	D	13	180	146
	S	11	170	142
	D	8	163	138
	D	6	165	141
	S	4	167	138
80	F	33	179	155
	M	30	187	147
	S	10	177	141
	D	8	170	142
	S	8	171	141
	S	3	162	140
81	F	37	201	160
	M	36	190	160
	S	13	185	161
	D	8	182	154
	S	6	178	150
	D	2	173	140
82	F	42	185	153
	M	33	187	160
	S	7	190	152
	D	6	165	141
	D	2	171	140
83	F	27	182	153
	M[2]	25	185	146
	D	2	155	131
	S	1	155	127

[1] Twins.

[2] Eldest daughter of 84 M.

II — *Continued*

		Age	L	W
84	F	40	200	160
	M[1]	38	179	150
	D[2]	25	185	146
	D	19	190	145
	D	18	181	140
	S	14	178	138
	S	11	180	140
	D	11	175	139
	D	7	178	138
	S	5	169	132
85	[3]	64	192	156
	F	38	190	153
	M	35	187	153
	D	17	181	145
	D	14	180	150
	D	10	178	146
	D	9	175	140
	S	7	175	146
	D	5	161	137
86	F	30	183	152
	M	27	191	147
	D	7	178	138
	D	6	182	141
	S	3	162	129
87	F	38	180	157
	M	31	186	146
	S	13	176	144
	D	7	163	140
	D	6	157	140
	S	4	170	140
	S	2	159	136
88	F	28	182	151
	M	25	191	145
	S	7	162	151
89	F	35	193	160
	M	28	183	155
	D	6	167	151
	D	4	165	140
90	F	35	190	157
	M	29	170	142
	D	8	172	140
	S	6	169	144
	S	5	165	142
91	F	36	182	157
	M	30	190	155
	S	9	171	147
	D	8	171	145
	D	6	171	143
	S	2	165	145
92	F	37	199	166
	M	28	180	153
	D	6	170	147
	D	4	170	137
93	F	34	188	155
	M	35	174	152
	D	14	174	145
	D	11	184	146
	S	6	175	148
94	F	40	182	155
	M	37	182	145
	D	14	185	146
	D	12	170	146
	D	11	173	143
95	F	37	190	160
	M	26	190	155
	S	4	170	146
96	F	33	182	152
	M	29	176	145
	D	8	170	134
	S	4	166	139
	S	2	177	156
97	F	32	196	160
	M	29	180	155
	S	6	172	140
	S	3	168	139
98	F	38	197	156
	M	36	191	146
	D	8	182	148
	D	7	176	140
	S	3	183	141
99	F	30	191	159
	M	28	170	146
	D	10	178	145
	S	6	165	148
100	F	31	200	160
	M	26	177	145
	S	5	179	152
	D	4	169	140
101	F	50	184	148
	M	48	175	147
	D	17	182	148
	D	13	178	150
	D	9	175	141
102	F	29	187	151
	M	25	188	157
	S	4	177	141
103	F	40	188	153
	M	38	185	148
	S	13	183	147
	D	8	170	143
104	F	42	185	159
	M	38	185	150
	S	14	183	164
	S	12	172	151
	D	10	164	148
	D	6	168	151
	D	5	166	142
105	F	25	186	150
	M	23	188	145
	S	4	170	142
	D	2	160	135
106	F	42	188	150
	M	32	187	155
	D	16	175	150
	D	14	177	153
	S	12	182	153
	D	7	168	142
107	F	49	190	158
	M	47	182	150
	?	17	178	148
	S	16	180	153
	S	13	182	156
	D	7	164	136
108	F	33	182	150
	M	30	181	151
	S	7	174	148
	D	4	166	140
	D	2	152	130
109	F	50	193	161
	M	46	189	154
	D	17	181	156
	D	16	177	153
	S	10	178	150
	D	6	182	150
110	F	40	202	156
	M	39	180	152
	S	12	180	149
	D	10	177	150
	D	8	168	145
	D	6	165	143
	S	4	173	150
	D	2	160	130
111	F	39	190	158
	M	38	180	147
	S	20	187	150
	D	11	172	145
	S	9	180	151
	S	6	175	148
	D	5	175	151
112	F	37	193	150
	M	35	183	147

[1] Mother of 83 M. The ages in this family are improbable. [2] Same as 83 M. [3] Mother's father.

II—*Continued*

		Age	L	W
	S	5	173	140
	D	3	169	136
113	F	58	190	156
	M	55	190	158
	D	21	180	147
	D	18	185	148
	S	17	200	160
114	F	55	189	153
	M	50	181	142
	S	23	187	146
115	F	55	193	160
	M	40	180	155
	S	13	176	149
	D	10	172	145
	D	6	171	140
	S	3	166	144
116	F	32	186	155
	M	28	174	155
	S	5	170	147
	S	3	168	142
117	F	40	196	155
	M	40	192	150
	D	12	186	149
	D	10	180	148
	S	6	185	148
118	F	67	183	155
	M	50	185	150
	S	12	183	150
	D	6	167	145
119	F	40	199	161
	M	38	185	146
	S	13	185	155
	S	11	176	148
	D	3	170	144
	D	3	165	138
120	F	28	193	156
	M	28	178	158
	S	6	176	148
	S	4	173	141
	S	2	175	147

III

		Age	L	W
121	F	38	185	161
	M	35	174	155
	D	11	171	145
	S	8	174	155
	D	5	163	141
	D	3	160	140
	S	2	160	135
122	F	29	193	155
	M	32	186	155
	S	9	175	146
	S	8	175	150
	S	5	178	150
123	F	38	190	164
	M	35	179	148
	D	16	173	155
	S	13	172	150
	S	11	170	143
	S	4	172	145
124	F	50	197	162
	M	45	200	155
	D	18	185	157
	S	15	192	155
	D	13	196	155
	D	10	181	140
125	F	45	188	153
	M	40	176	146
	D	12	179	145
	S	11	177	145
	S	8	176	146
	S	6	174	144
126	F	57	195	160
	M	56	180	145
	D	20	180	145
	D	18	180	148
	D	16	179	148
	S	15	185	157
	D	10	174	145
	S	7	165	143
	S	5	178	146
127	F	40	195	155
	M	38	180	152
	S	16	185	157
	D	7	170	143
128	F	36	182	155
	M	31	180	148
	S	12	165	137
	D	10	165	140
	S	8	173	155
129	F	48	188	155
	M	44	176	156
	S	20	180	151
	D	14	175	146
	D	11	175	145
	S	9	175	143
130	F	46	191	150
	M	44	184	150
	S	26	196	152
	S	23	188	151
	D	18	180	148
	S	16	181	149
	D	12	176	148
	D	8	179	146
131	F	28	198	149
	M	26	183	153
	S	6	177	143
	D	4	174	148
132	F	42	183	152
	M	40	180	156
	D	18	182	151
	S	19	188	159
	S	12	181	155
	D	8	179	149
133	F	26	186	151
	M	21	177	143
	D	3	175	139
134	F	45	186	152
	M	34	182	150
	D	15	181	149
	D	12	181	150
	D	10	178	143
	S	6	171	140
135	F	48	181	148
	M	41	185	144
	S	20	186	158
	S	17	189	158
	D	14	174	137
	D	12	189	149
136	F	34	172	154
	M	25	181	147
	D	6	166	139
	S	4	161	145
137	F	72	195	144
	M	68	179	152
	D	38	181	145
137*M	Same as 137 D.			
	S	17	190	150
	D	14	174	145
	S	12	171	147
138	F	38	188	155
	M	33	180	148
	S	13	181	141
	S	10	180	145
	S	7	165	144

III — *Continued*

		Age	L	W
139	F	64	186	149
	M	54	184	155
	S	36	181	147
	S	32	188	144
	D	30	183	153
	S	28	183	151
	S	21	182	154
140	F	36	185	161
	M	36	187	150
	D	14	182	145
	S	11	175	151
	S	7	164	140
	S	3	167	133
141	F	28	182	155
	M	26	176	141
	D	6	161	140
	D	4	161	138
	S	2	162	135
142	F	34	185	160
	M	26	180	151
	S	7	168	135
	D	4	168	145
143	F	48	187	156
	M	42	184	148
	S	21	188	154
	S	18	194	158
	S	16	191	149
144	F	35	186	153
	M	33	185	150
	S	11	177	141
	D	9	174	139
	D	5	166	134
145	F	28	178	158
	M	24	175	151
	D	3	155	138
146	F	40	193	154
	M	35	185	156
	D	13	182	152
	D	9	172	145
	S	7	177	150
'147	F	30	192	155
	M	28	183	156
	D	8	169	146
	D	4	166	145
148	F	31	196	151
	M	30	183	157
	S	11	183	151
	D	6	168	147
149	F	36	190	146
	M	34	181	147
	D	13	166	140
	S	9	175	145
	S	6	170	146
150	F	36	187	154
	M	30	179	151
	S	12	175	153
	S	7	168	146
	D	9	167	143
151	F	28	190	159
	M	23	180	150
	S	3	158	145
152	M	60	187	150
	D[1]	23	185	145
	D[1]	23	185	147
	S	18	191	158
	S	16	193	153
152*	F	27	192	160
	M	Same as 2d D of last family		
	S	3	181	140
153	F	36	185	155
	M	26	187	160
	D	9	166	151
	S	7	175	146
	D	3	166	140
154	F	53	185	153
	M	50	182	152
	S	24	186	156
	S	22	182	149
155	F	46	200	155
	M	36	180	157
	S	17	202	150
	S	15	185	142
	D	9	174	146
156	F	25	195	161
	M	26	184	153
	D	4	176	145
	D	2	166	145
157	F	42	182	160
	M	40	182	165
	S	24	184	168
	D	22	176	152
	D	15	170	156
	S	13	174	152
	D	10	171	153
	D	10	160	145
158	F	31	196	151
	M	30	186	157
	D	6	166	147
	D	4	166	147
	S	2	156	149
159	F	—	185	162
	M	34	176	144
	S	14	178	143
	D	12	172	144
	D	9	167	145
	S	7	166	144
	S	5	161	141
	D	2	164	'130
160	F	49	188	147
	M	46	191	151
	S	24	195	150
	S	21	192	152
	D	18	182	146
	S	16	185	152
	D	14	180	144
	D	9	178	148
	D	5	176	141
161	F	50	186	153
	M	50	176	145
	D	17	176	143
	S	16	186	152
	S	10	169	150
162	F	34	188	163
	M	33	179	152
	S	5	163	144
	D	2	153	142
163	F	65	186	156
	M	55	184	153
	S	33	192	158
	D	31	179	153
	D	24	175	151
	S	22	181	154
	S	19	186	151
164	M	68	192	155
	D	40	180	151
164*	F	45	192	150
	M	Same as 164 D		
	S	20	195	162
	D	16	180	149
	S	10	186	150
165	F	28	182	148
	M	21	178	150
	D	5	158	133
	D	3	155	136
166	F	32	200	159
	M	28	179	152
	D	10	177	146
	D	9	174	'150
167	F	33	190	160
	M	27	181	147
	D	7	177	145
	S	5	176	145

[1] Twins.

III — *Continued*

		Age	L	W
168	F	56	184	151
	M	45	182	155
	S	28	177	158
	D	22	178	146
	S	19	183	161
169	F	45	191	157
	M	43	181	151
	D	17	182	151
	S	14	185	147
	S	8	175	144
	D	5	168	141
170	F	32	202	165
	M	26	174	151
	S	7	171	150
	D	5	172	150
171	F	37	188	150
	M	35	183	145
	D	3	177	141
172	F	40	200	148
	M	35	174	144
	D	15	172	154
	S	13	182	150
	S	11	172	155
	D	7	165	145
173	F	21	184	162
	M	23	186	152
	S	4	162	145
174	F	23	191	157
	M	20	181	148
	D	2	166	126
175	F	40	187	159
	M	38	180	153
	S	15	186	148
	S	13	186	146
	S	11	177	150
	S	8	178	142
176	F	32	196	156
	M	30	173	145
	S	6	164	143
	S	5	164	143
	D	3	159	126
177	F	34	185	154
	M	29	178	146
	S	6	170	145
	D	2	156	128
178	F[1]	32	192	155
	M	30	182	155
	D	8	183	140
	S	5	176	142
	S	3	176	145
179	F[2]	28	185	154
	M	25	180	152
	S	3	169	136
180	F	49	187	160
	M	38	171	149
	D	14	178	151
	S	13	174	150
	D	7	162	140
	D	3	155	133
181	F	48	190	147
	M	42	190	153
	S	17	183	155
	S	15	186	152
	D	13	176	143
	S	10	180	145
	S	8	176	143
182	F	39	200	158
	M	32	182	149
	D	13	184	145
	S	12	182	150
	S	9	186	152
	D	7	171	150
	S	5	177	139
183	F	42	202	159
	M	40	175	140
	D	20	183	156
	S	18	189	157
	D	13	182	155
	S	10	177	151
	S	9	175	152
	D	7	168	146
184	F	50	191	151
	M	46	186	151
	D	25	180	152
	D	20	187	145
	D	18	185	152
	S	17	185	155
185	F	46	187	154
	M	42	177	148
	D	20	175	144
	D	18	175	151
	D	16	171	140
	D	12	165	143
	D	8	160	140
	S	6	165	136
186	F	34	188	155
	M	28	170	140
	D	9	160	142
	D	8	160	142
187	F	55	185	155
	M	50	182	158
	S	19	195	165
	S	14	190	158
	D	12	180	159
	D	8	178	145
188	F	42	199	155
	M	34	179	148
	S	12	178	145
	D	10	175	138
189	F	38	190	157
	M	38	176	148
	S	20	189	148
	D	17	172	142
	S	13	168	143
	S	11	178	150
	S	6	173	143
190	F	34	188	155
	M	28	170	140
	D	9	160	141
	D	8	160	142
191	F	52	186	154
	M	48	175	155
	D	22	175	150
	D	18	180	153
	D	14	183	155
	S	12	182	153

[1] Brother of 179 F.

[2] Brother of 178 F.

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SOME COMPARATIVE TRAITS OF THE MASKOGIAN LANGUAGES

By FRANK G. SPECK

In their former range the languages constituting the Maskogian linguistic stock were spoken by the Indians occupying, in general terms, the region situated between the Mississippi river, below the junction of the Ohio, and the Atlantic ocean southward to the Gulf of Mexico. At the present time the Maskogian-speaking tribes are represented by the Choctaw, Chickasaw, Creek, and Seminole, and reside in Indian Territory. Into all of these tribes, which number collectively about 50,000 souls, have been incorporated from time to time various other tribes in more or less close linguistic and ethnological relationship with them. So, in the present-day Choctaw and Chickasaw have somewhere been merged the Huma, the Yazoo tribes, the Acolapissa, and probably many others who are now known only historically by names which appear in old records. Just what the affiliations of these tribes were and where they belong in a critical classification it is difficult to say. Farther east the same conditions held, but here we find the group distinctions a little better preserved in some of the confederated towns which make up the body of the Creek Nation. These were chiefly Hitchiti, Apalachi, Koassati, Alibamu, and perhaps others not yet clearly determined, whose dialects differed variously from the normal tongue spoken in the majority of the Creek towns. They generally resided, before the removal westward, among the Lower Creeks, nearer the gulf, and between the Choctaw and the Upper or Northern Creeks. This gave them a somewhat intermediate geographical position between the larger Choctaw-Chickasaw, or western group, and the Creek or Maskogi proper, in the east.

As regards the Natchez, whose possible linguistic affinity to Maskogian has been recently suggested,[1] no attempt has been

[1] See the article by Dr John R. Swanton in this number. — EDITOR.

made, for the purposes of this article, to investigate the reasons leading to such a conclusion. Accordingly Powell's old classification of this tribe as forming a separate stock has been adhered to for the present at least. Until more is known of the smaller dialects of Maskogian, however, the time is hardly ripe for pronouncing judgment on their exact relations to the larger and better defined groups eastward and westward. At any rate, for the time being the grounds for Gatschet's division of the whole Maskogian stock into four main groups: (1) Choctaw-Chickasaw, (2) Alibamu-Koassati, (3) Hitchiti-Apalachi-Mikasuki, (4) Creek-Seminole — seem to be well taken if we accept his classification on the basis of the lexicographic material which unfortunately is about all that is available for purposes of comparison.

The material presented here has been taken in part from Gatschet's account of Creek and Hitchiti,[1] which he procured from Indians in the general region of Eufaula town, Creek Nation, and from Byington's *Choctaw Grammar*.[2] The latter contains much material, but it is not critically treated and is poorly systematized from an inductive point of view. Gatschet on his part does not pretend to be complete in his linguistic sketches of Maskogian. The rest of the matter is the result of personal inquiries attendant upon the collection of some texts from the Creeks of Taskigi and Lutcapoga towns, and the Chickasaw of Indian Territory. The investigations were made only incidentally while the author was engaged with the Yuchi Indians, and the prospects now are that it will be some time before the Maskogian material can be finally digested and presented in detail.

Before attempting to deal with some of the more specific grammatical traits common to these languages as members of one stock, it may be well to say for very general comparative purposes that Maskogian, in its broadest general classification, may be characterized as pronominally incorporating and verbally inflectional. As for polysynthesis, which has been supposed by some philologists to be an inseparable property of American languages, it can hardly be said to be an important characterizing feature here. In this respect

[1] *Migration Legend of the Creek Indians*, vol. I, Phila., 1884; vol. II, St Louis, 1888.

[2] Phila., 1870.

Maskogian offers quite a contrast to the neighboring Iroquois and Algonquian which may come out more clearly later on.

Considering Maskogian again from the broadest comparative view-point of American languages, it appears to be acoustically euphonious and well-balanced as regards the frequency and combination of vowels and consonants. It seems to have neither the consonantic harshness in quality of the North Pacific coast languages nor the extreme nasalized or vocalic qualities of Iroquois or Yuchi.

The phonetic range itself, however, is characterized by some peculiarities when compared with that of Iroquois, Sioux, and Algonquian. Maskogian differs from these types in having the palatal *ł* which is characteristic of the languages spoken along parts of the Pacific coast, and a dental-labial *f* not at all common on this continent. Yuchi, however, shares both of these sounds with Maskogian. This makes of nearly the whole Southeastern region a phonetic unit, with the exception, so far as is known, of Catawba and Cherokee, which latter has only an approach to the palatal *ł* in some of its dialects.

Internally the Maskogian languages present considerable phonetic unity, having collectively the glottal catch (ʿ); the velar stops *q* and *g*, in Creek; the palatals *tc* and *dj*, *dc*, pronounced in Creek with the tip of the tongue pressed against the palate, giving thus an intermediate sound between our *dj* and *dz*; also *k* and *g* as in English; the indeterminate surd or sonant *t* and *d* often influenced by surrounding vowels; the labials *p*, *b*; spirants *s*, *ts*, and *c* pronounced like English *sh*; and the semivowels *y*, *w*, *h*. The above-mentioned palatal *ł*, with corresponding sonant somewhat like our *dl* in Chickasaw, as well as doubled consonants are common property of all the Maskogian branches. It seems, in the nature of an exception to the above list of common sounds, that the western languages, Chickasaw and Choctaw, are weak in the sonant series, having only *b* among the stops. In addition to this, many cognates have *tc* and *k* corresponding to *dj* and *g* in Creek, but no *v* or *z* occurs in a similar relation to *f* and *s*. Another internal comparison can be made with the spirant *ł*, which in some of the Creek dialects is merely breathed, and in others, noticeably in Hitchiti, is

strengthened to the velar spirant *x*. A dialectic peculiarity of Chickasaw is to weaken *n*, in the pronoun, to a nasalization of the preceding vowel before *y*.

The long vowels throughout are *ō*, *ū*, *ā*, *ē*, *ī*, while *o*, *u*, *a*, *e*, *i* occur short. In the Creek dialects are also found the open obscure *ạ*, like *u* in English *but*, and long open *ä* like *a* in our word *fare*, without, of course, the *r* tinge. The long vowels in both the eastern and western languages appear nasalized. The diphthongs are *ai* and *au*.

In all the Maskogian languages clusters of more than two consonants are extremely rare, if they occur at all; nor are vowel clusters common. Some regular vocalic changes evidently take place in Choctaw, but from Byington's material little can be gleaned that yields definite results on this point. Prominent changes, however, are the assimilation of vowels in some prefixes and initial stem vowels to the value of the longer, and the phonetic modification of *m* of the pronouns to *n* before certain consonants.

It also appears that syllables are well balanced with consonant and vowel, the words and stems themselves showing a strong tendency to end in a vowel. Nominal and verbal derivative suffixes are likewise mostly syllabic with a final vowel, while the presence of consonant syntactic endings, whose position is always final, tends to give consonant terminations to words in sentences. There do not seem to be any restrictions in the use of initial vowels or consonants.

The processes employed by the Maskogian languages to express grammatical change are prefixation, infixation, suffixation, and a form of reduplication. The latter, however, is not of as much importance in general usage as the affixing processes.

In a general review of the grammatical functions played by the various affixes, it appears that under the heading of prefixes we have two pronominal paradigms, including the possessive and neutral subjective, the objective, and indirect objective forms; in short, all but the active subject pronouns in the Creek dialects and the first person of this paradigm in the western and middle groups of dialects. Some verbal derivatives, such as locatives, reciprocal, reflexive, and instrumental are also prefixes. Under suffixes we find the active subject pronouns in Creek and Hitchiti, and only the first person of

this paradigm in the western languages, together with quite a number of modal and temporal, adverbial, plural and distributive, noun-forming, verb-forming, and two syntactic case suffixes. Besides these we encounter a richness of demonstrative article endings which offer one of the chief noun complexities of the languages of this group. This matter, which shows the most complexity in Choctaw and Chickasaw, has, among other problems of Maskogian, not yet been worked out satisfactorily.

Infixation, which is usually accompanied by phonetic changes such as sonantizing for instance, serves several purposes in these languages. We find it employed in Creek to express modification in mood and tense, and in Choctaw and Chickasaw to indicate voice, and such adverbial ideas as the continuative, immediative, intensive, and frequentative. Similar internal changes occur in the Hitchiti verb, but it is not at all certain in how far these changes can be called true infixation until more is known of the verb etymology. Some of the internal phonetic modifications which accompany the insertion of a syllable into a Choctaw stem are nasalization of the vowel in the first syllable, aspiration, accentuation, and lengthening. Besides, the consonant of the accented syllable in the middle of polysyllabic verbs is frequently doubled in conformity with some law which operates in cases of infixation. The whole question of infixes is an interesting one in Creek, and seems to be closely connected with that of verbal derivative prefixes.

Some of the evidence for this point is deserving of mention. It appears that many of the active bisyllabic verbs here have, in their first syllable, elements related phonetically to body parts. These may have been formerly instrumental or locative prefixes which, in combination with verb stems, have become in the course of development stereotyped words in which the prefix came to play no formal part as such. In that case the apparently infixed elements coming between this body-part prefix and the verb stem would be, in their original usage, nothing more than prefixes too. The occurrence of these so-called infixed elements in verbs which do not lend themselves to the above analysis may then be experimentally explained by assuming that the speakers lost, in some way, the consciousness of difference between bisyllabic verbs and monosyllabic

verbs with prefixes, and, later on, when the analogy became a fixed one, that both sorts of verbs were treated in the same way. This explanation suggests itself in Maskogian, in reference to the apparent infixation of certain elements in verbs of two syllables, somewhat more clearly than in Dakota where in certain similar verbs the subject pronouns are infixed. Some suggestive examples of these possibly derivative verbs taken from Creek, are *litkäs* I run, possibly connected with *ili* his foot, *náfkäs* I strike, *ina* his body, and more obviously still, *nukmiläs* I swallow, with *inúkwa* his neck.

Reduplication appears in Creek chiefly in bisyllabic adjectives and verbs derived from them to express ideas of distribution or frequency in time and space. The form of reduplication is rather peculiar and might possibly bear some relation to infixation. The first consonant and following vowel are repeated after the second consonant. A few examples may illustrate it better: *sálgi* many, *sálsagi* many distributed; *hátki* white, *háthagi* white in spots; *lástis* it is black, *láslatis* it is black in spots. An outwardly similar form, but apparently not subject to the same rule, is found in the western languages. Choctaw has reduplication in the verb, of the accented vowel with different consonants or semi-vowels, *y*, *h*, or *l*, added to it to form the passive voice and passive adverbial modification.

Position, it can readily be seen, does not play a very important part formally in Maskogian since a pronominally incorporating verb and syntactic noun suffixes give the various words in the sentence a fairly definite setting. There is, however, a general tendency to follow the order of subject, object, verb, and, in cases of compounding, modification or subordination, for the main idea or that which is to be qualified to come first in position.

Three distinct pronominal paradigms suffice to cover all the pronominal possibilities. They are not so clearly separated generically from each other as some of the paradigms in other American languages. The one may be called the active subject paradigm; the second, the neutral subjective, neutral possessive, and direct objective; and the third, the artificial possessive and indirect possessive objective. To be more clear, the first paradigm is used only in one circumstance, and that is to express the subject

of the active verb. These forms are suffixed with the one exception that in Choctaw and Chickasaw the second personal form is a prefix. The second class expresses, without distinction in form, by prefixing, the subject of the neutral verb, the possession of an object which is an inalienable possession such as a body-part or family relation, and its other function is to denote the pronominal object of an active verb. Thus there is no fundamental difference between such an expression as "I am sick" and "my sickness," so far as the pronouns are concerned. The last class of pronouns, which are also prefixes, is used to imply the possession of an object that can be acquired or transferred — although this category is not strictly logical — and, in a like sense, the indirect pronominal objects. These are commonly known as the dative and possessive indirect objects, the latter being rendered in English by *his*. In regard to the last two paradigms, as can be seen from the accompanying table, there seems to be a very close identity in form between them, the indirect objective appearing to amplify the possessive. These paradigmatic distinctions are common property to the whole stock, showing only slight variations in the different languages.

The true personal pronoun forms have only the first, second, and third singular, and the first person plural, except perhaps in the active subject paradigm. A distinction is marked in Choctaw between the dual and the plural first person. In the active subjective forms in all the languages there are second and third person plurals which, however, seem closely related to the singular forms. It would appear that these are derivatives from the singulars, as the plurals in the other paradigms undoubtedly are.

As has been mentioned before in speaking of processes, the pronouns in Creek appear in different forms to denote modifications in tense and mood. But in all such pronominal mood and tense complexes the pronoun stem elements are quite transparent. This is true in all the persons but the first singular, where some irregularity, possibly due to a phonetic change, tends often to obscure the radical part. The only widely differing forms are observable in the indicative and the negative, and this is a prominent feature of all the languages. The interrogative pronouns are apparently

derived from the indicative. Modal auxiliaries are used for the other subordinate moods.

The tense signs are simple suffixes in Choctaw and Chickasaw. But in Creek these suffixes enter so closely into combination with the pronouns, coming between the latter and the verb stem, that the pronouns themselves often appear quite unrelated in different tenses. Creek has also, it would seem, not only more complexity in tense and pronoun combinations but more tenses than the western languages. It makes a distinction between continued and completed action in the future, past, and aorist. The Creek verb requires, however, more critical study before it can be safely discussed as regards tenses. Hitchiti exhibits similar verb complexities.

The classification of voice is found, for the neutral and active, in the pronouns in Maskogian. The active is differentiated from the neutral by quite material differences in form and position. The passive, however, is not denoted by any particular set of pronouns as the change takes place in the verb itself for this voice and the neutral pronouns are employed.

The subjoined table will show a few of the cognate pronominal forms chosen from the four available languages of the stock:

ACTIVE INDICATIVE SUBJECT PRONOUNS

	CREEK (with verbal present *-is*)	HITCHITI (with verbal *-s*)	CHOCTAW	CHICKASAW
1st pers. sing.	*-äs*	*-lis*	*-li*	*-li*
2d pers. sing.	*-tckis*	*-tskis*	*ic-, is-*	*ic-*
3d pers. sing.	(*-is*)	(*-s*)	——	——

ACTIVE NEGATIVE SUBJECT PRONOUNS

	(with verbal *-s*)			
1st pers. sing.	*-akas*	*-atas*		*ak-*
2d pers. sing.	*-tskigas*	*-tskatis*		*tcik-*
3d pers. sing.	*-gas*	*-tis*		*ik-*

NEUTRAL SUBJECT, NATURAL POSSESSIVE, AND OBJECTIVE PRONOUNS

	CREEK	HITCHITI	CHOCTAW	CHICKASAW
1st pers. sing.	*tca-*	*tca-*	*sa-*	*sa-, asa*
2d pers. sing.	*tci-*	*tci-*	*tci-*	*tci-*
3d pers. sing.	*i-*	*i-*	——	*i-*, ——
1st pers. plu.	*po-, pu-*	*po-, pu-*	*pi-*	*pu-, apo-*

ACQUIRED POSSESSIVE, INDIRECT OBJECT, AND POSSESSIVE OBJECTIVE PRONOUNS

	CREEK	HITCHITI	CHOCTAW	CHICKASAW
1st pers. sing.	*am-*	*am-*	*am-*	*am-*
2d pers. sing.	*tcim-*	*tci-*	*tcim-*	*tcim*
3d pers. sing.	*im-*	*im-*	*im-*	*im-*
1st pers. plu.	*pom-*	*puhni-, pu-*	*pim-*	*-pomi*[8]

Prefatory to an attempt to say anything about nouns or verbs as such, it seems necessary to mention the lack of any real difference between many of the noun and verb stems themselves. A mere word (and the majority of them seem to be bisyllabic in Maskogian) without noun-forming or verb-forming suffixes, may rightly be called either a noun or a verb so far as its form alone indicates. This unmodified base is grammatically interpretable as an imperative verb or a mere abstract expression of the idea as a noun. There seems to be a parallelism in this respect with English monosyllables, such as sleep, run, kick. To become a true verb, in Creek and Hitchiti, the base is provided with a regular verbal ending; but in Choctaw and the western languages this formal appendage is not required. Likewise, to become a noun the base must take on nominal endings expressing syntactical relationship to other words or derivative noun-forming suffixes. In Creek and the eastern languages these nominal endings number at least half a dozen, while Choctaw and Chickasaw have a large number of demonstrative-article endings that come in combination with the syntactic endings, thus giving the noun quite an exact range of limitations and not a little cumbersomeness. Of these nominal syntactic endings there are two, one denoting the subject of a verb, the other the object, which are important characterizing features of the family.

Considering the verb complex with its pronominal and derivative prefixes, so-called infixes, and suffixes, Maskogian appears to be highly inflectional. The verbal affixes often modify the stem to some extent, but a yet more thoroughgoing change in the verb itself takes place under certain conditions. These conditions are the singularity, duality, and plurality of the subject, and singularity and plurality of the object of the verb. In some cases the changes wrought by these considerations of number are merely to the extent of additional suffixes to the verb stem. But there is a large cate-

gory of verbs whose stems are so widely different for singular and plural subject or object as to be apparently non-related morphologically. The various languages show different development in this connection. The change which the Creek verb undergoes, for instance, for a dual subject is affected by the attachment of a suffix directly to the stem, to which suffix the pronominal elements are in their turn added. There is, as might be expected, an apparent relationship between this dual verb suffix and the numerical *two*. Some verbs in Creek are entirely different with singular, dual, and plural subjects. On the other hand, the effect of a plural object upon the predicate is perhaps greater than in the foregoing case. In a large number of instances when the object is plural an entirely different verb from that used with a singular object is demanded. Some concrete examples of these verb changes are: From Creek, *isis* he takes a single object, *tcáwis* he takes more than one object; *lítkis* he runs, *bifátkis* they run; *ilidjis* he kills, singular object, *pâ'cadis* he kills, plural object.

A similar radical difference is found between verbs with singular and plural subjects in Chickasaw. Choctaw shows the same thing, according to Byington, regarding both subject and object. It seems more usual, however, in this language to find the distinction in the number of subject and object disregarded in the expressed form of the verb.

Verbification of adjectives is characteristic, merely the addition of a personal pronoun and a certain verbal suffix sufficing in all such cases. It seems that Hitchiti shows a stronger tendency than Creek to verbify bisyllabic nouns by this formal process.

In the matter of voice the changes are purely verbal in Creek and Choctaw, and these may be considered fairly typical of the two groups. In the former the passive forms differ materially from the active in having a special suffix and in taking the possessive or neutral subject pronouns. Choctaw appears to infix a syllable in the verb to form the passive from the active. But, as has been mentioned, what is here termed infixation is not an assured certainty so long as there remains any doubt as to the analysis of the bisyllabic verbs which exhibit it.

There are a large number of derivative modal and adverbial

ideas in many other languages which are denoted by affixes, but here find their expression only in independent auxiliary verbs or uninflected adverbs. In Creek, for instance, such ideas as the potential and the quotative are expressed by adverbs, while other derivatives are expressed by independent verb forms. Such take the pronominal inflection in different moods and tenses as though they were the qualified verb, and the latter is rendered as an objective noun. For example, "I try to run" would be "run (with objective suffix) I try," and similarly for the desiderative. As an example of the first sort, that of the uninflected adverbial auxiliary, we have "able I see," for "I am able to see."

On the whole there are only a few derivative ideas the sign elements of which are fixed directly to the verb and so may be said to be incorporated into it. These include reflexive, reciprocal, instrumental, and a few locative prefixes, and evidently only a causative suffix and another whose meaning still remains obscure but probably means "in company with." As a matter of exactness some of these prefixes, from the word-like nature they seem to possess of themselves, may just as well be termed proclitic particles, and in this sense are of course less intimately associated with the verb as incorporated elements than might be supposed otherwise:

	CREEK	HITCHITI	CHOCTAW[2]	CHICKASAW
Reflexive	*i-*	*il-*	*ille-, ill-*	*ili-*
Reciprocal	*idi-, di-*	*iti-*	*itti-, itt-*	*iti-*
Causative	*-idj*	*-idsh*[1]	*-chi*	
Instrumental	*is-, s-*	*is-, si-*	*isht-*	

There also seem to be many verbs in Creek which are compounded with body-part words. These words may have instrumental meanings; in some cases quite obviously they have. But invariably the similarities between the prepositive verbal elements and the words denoting body parts are very clearly visible. Some examples of these are given in the discussion of infixation (p. 476).

Starting with the indefinite word stem again, we find that various nouns as well as verbs can be built up by means of suffixes. Under these are the agentive, the active, and the abstractive. As an exception to this fulness of form, however, it seems that in Choctaw

[1] Gatschet's orthography.

[2] Byington's orthography is used in the Choctaw forms.

the mere unmodified word itself without formal endings expresses these conditions of the noun. Quite a far-reaching characteristic feature of this linguistic stock is to be found in the noun suffixes expressing case relationship of the subject and object of the active verb and the subject of the neutral verb. A complexity in the noun occurs, in Choctaw and Chickasaw, as regards the vowel article demonstratives which come directly after the noun stem and upon which the case elements hang, as it were. With these suffixes go a number of others indicating renewed mention, the conditional, the conjunctive, and other ideas more or less uncertain as to meaning. Thus in the noun of a full Choctaw sentence we ordinarily find several ideas of relationship with the context expressed by formal elements. The noun complex "man-some-referred to before-subject of verb" might be taken as a typical example from both Choctaw and Chickasaw. In Creek when the word stem ends in a consonant it takes an apparently inorganic vowel, between the stem and the case ending, which may have been related in some way to the Choctaw article vowels. In Hitchiti, however, there seems to be some function attached to this connecting vowel, but from Gatschet's material it cannot be definitely ascertained to what extent.

The syntactic case suffixes in Creek and Hitchiti are two in number, as said before, indicating the subjective and objective by the consonants *-t* and *-n* respectively. Choctaw expresses its subjective by *-t* and its objective by nasalization of the final vowel, and Chickasaw has only the subjective in *-t*. By this it seems that the full expression of the objective case by formal elements weakens in the western Maskogian languages, playing no phonetic part whatever in Chickasaw, so far as has been determined, and being worn down to a mere phonetic suggestion of itself as nasalization in Choctaw. The idea is a particularly strong one in Creek, in which all sorts of verbs in various persons and tenses are converted into nouns or adjectives by the case endings according to their syntactical requirements.

The possessive relation between nouns, which, incidentally, might also be expected to be expressed by a case suffix, is denoted by the third person possessive pronoun.

The idea of plurality in nouns is not a very prominent one in any of these languages. There are only two general suffixes for this,

and one prefix in Choctaw, which cover the notions of distribution and collectivity in reference to people and animate beings.

	CREEK	HITCHITI	CHOCTAW[1]	CHICKASAW
Collective plural	*-algi*	*-ati* (*okli*, tribe)	*-okla*, *atiha*	*okala*
Diminutive	*-udji*	*-udshi*[2]	*-ushi*	*-aci*
Augmentative	*łakko*	*tcobi*	*chito*	*isto*

The common method of forming the diminutive and augmentative of nouns is by adding an enclytic syllable, but it is interesting to note that Byington credits Choctaw with another process for diminution, namely, that of consonant modification. He says: "Sometimes it (the diminutive) is expressed by a kind of lisp; as for *ikchito*, not large, say *iksito*."

Locative and adjectival modification of nouns is rendered by descriptive words following, in order, the qualified idea, and on such occasions these modifiers take the same syntactic endings. Many temporal adverbs are also treated syntactically as nouns. The demonstratives in all the Maskogian languages show three general relations in time and space, namely, nearness to the speaker, nearness to the second person or to an object or person a short way off, and a general rather indefinite greater distance.

Lastly, in regard to nouns, the languages of the Maskogian family show a tendency toward the use of descriptive noun compounds for the names of many important objects in the everyday life and environment. Leaves, for instance, are 'tree hair,' Indian is 'man red,' east is 'sun rises,' ocean is 'water white,' ancestors are 'our trunks' (meaning trunks of trees), shoe, moccasin, is 'man his foot coverer,' and knife is 'with something cut.' In a similar manner objects that have newly come within their knowledge have been given, by these Indians, in accordance with some old morphological concept, compound descriptive names, so we have in Choctaw for mule, 'horse ears long'; for sugar, 'salt sweet'; and in Creek for horse, 'deer big'; for mule, 'deer big brayer'; for rum, 'something strong.'

To conclude with a few remarks on some of the more prominent features of Maskogian which are of interest when compared internally and with those of neighboring linguistic stocks, we find, in

[1] Byington's orthography.

[2] Gatschet's orthography.

looking abroad, quite a contrast as regards verbal polysynthesis. The large number of subordinate local and adverbial ideas which are expressed by independent word auxiliaries in Maskogian are found in Algonquian, and Eskimo as well, to be embodied in the verb itself by means of affixes which number more than a hundred. In the matter of verb polysynthesis Maskogian seems to be more like Sioux, in which these affixes number fewer than a dozen. The presence of two syntactic case suffixes is another distinguishing trait which has not been found in any of the neighboring stocks so far as they are known. The peculiar development of the negative modal pronoun is also rather strange to eastern languages.

As regards the languages of this group in relation to each other, more detailed investigation is necessary before much can be said. We have, however, nearly enough material to see that, to some extent, Choctaw shows a tendency toward simplification when compared with the eastern languages. Expressions of tense and mood are here simplified in form by having the elements, which in Creek are embraced in the verb complex, added to the verb as loose suffixed particles. Furthermore verbal and nominal endings, which give completeness and unmistakable identity to words, do not appear as prominently in Choctaw as they do farther east. It has also been seen that one syntactic case ending tends to weaken and disappear in the western group. The use of different verbs with singular and plural subject or object is also less rigidly observed as we leave the Creek group. This tendency toward relative simplicity of expression, which Choctaw presents when compared with Creek, may be historically comparable to the process of development which has operated in the Siouan family, in which we find Dakota lacking many of the apparently old complexities which Dhegiha has preserved.

Lexically the greatest divergence is found between the two geographical extremes, the Choctaw-Chickasaw group and the Creek or eastern. Comparative vocabularies are not given here as they are fairly abundant in other published sources, a short but handy one being available in Gatschet.[1]

[1] Op. cit., vol. I, p. 56.

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DIEGUEÑO MORTUARY OLLAS

By CONSTANCE GODDARD DuBOIS

For years I have pursued the search for a mortuary olla among the Diegueño Indians of southern California, and, like a will-o'-the-wisp, it has allured only to escape me. The Indians all knew of these burial jars, and the whereabouts of some were known to the initiated; but to meddle with them was sacrilege.

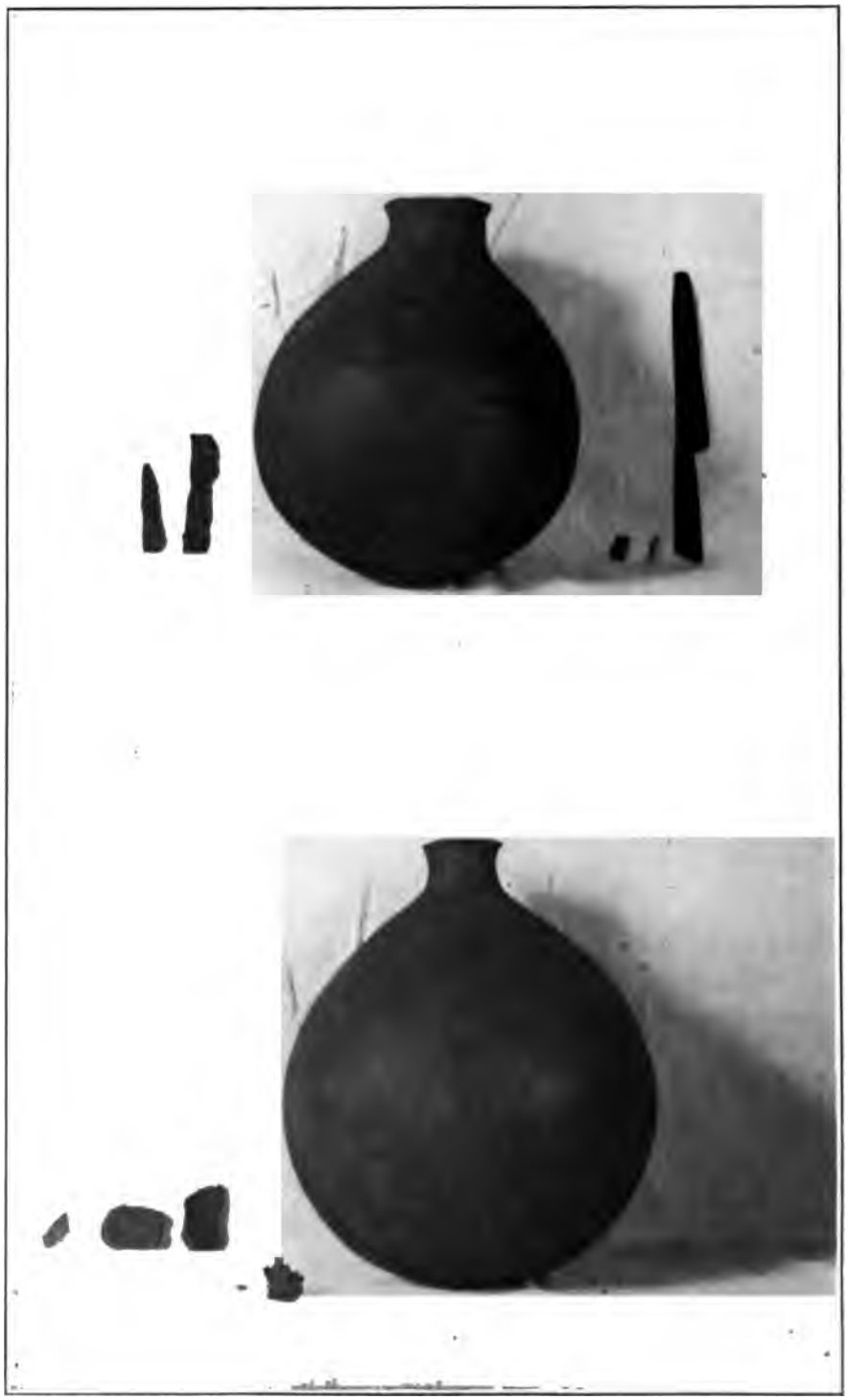
An educated Indian girl who still shared the feelings of her people wept when it was suggested that her grandfather should secure one for my benefit. It was represented to her that it was to be used for the benefit of science and not to satisfy an idle curiosity; that those thus buried were so long forgotten that it was not like disturbing the remembered dead. But the casuistry availed little, and she was happy when the search proved futile.

At last, through the efforts of a friend, an aged Indian was induced to disclose the secret locality where the burial had been made; and guided by his directions another old Indian undertook the search. Not daring to pursue the adventure alone, he induced a friend to accompany him; the latter, caring little for the old religion, had in fact been for years enlisted in the quest for the mortuary olla, but hitherto in vain.

Following the directions of their guide, the two reached the distant cañon in the mountains, searched among the fallen granite rocks, most often the spot selected for a cache, and digging here they found two burial jars, or ollas, intact and perfect.

I have them now before me (see plate XXIX). The stones which had covered the narrow mouths of these receptacles had been displaced by the pushing roots of brushwood, and the earth had gradually silted in, partly filling the jars and mingling with their contents. Part of this earth may have freshly fallen in at the time of discovery.

The two jars appear to be of different periods of manufacture,



DIEGUEÑO BURIAL OLLAS

Upper figure: Burial olla showing broken arrowheads and rusted case-knives found within it
Lower figure: Ancient burial olla showing fragments of skull and piece of the jawbone still retaining a tooth.



of independent make, and to have been buried at different times. It is probable that this place was used, as our cemeteries are, for successive burials, side by side, or in adjacent spots.

The jar of latest period is of the sort of pottery still made among the Diegueños. Its texture, quality, and surface are not unlike the vessels now to be seen as household utensils, some old, some new, occurring as far south as Manzanita. It can not be less than sixty years old, and is probably much older. The priests forbade the burning of the dead, but it was secretly practised among the mountain Indians within the memory of some of the oldest men, say within a period of sixty or seventy years.

This jar is about 11 inches high, 29 inches in circumference, and 3 inches across the mouth, weighing four pounds. It is not symmetrical enough in shape to maintain a correctly upright position on its rounded base.

It contains, mingled with the intruding earth, bits of bone and charcoal; some broken arrowheads; bits of stone fallen in from above; and two old case-knives eaten by rust, one broken quite in two. The knives were probably procured at the Missions, very likely manufactured there; and may have been buried with the ashes of the dead for ceremonial reasons, possibly having first been thrown upon the pyre with other valued household possessions and burned with the dead.

The knives were made in one solid piece of iron or copper, in a curious antique shape. The olla is evidently not prehistoric, but is probably a hundred or a hundred and twenty years old.

The other jar appears to be of greater age. Its shape and general appearance are different, its outlines more symmetrical, the mouth narrower. The ware is of different surface, weathered by time. It is about as thick as a gourd, worn on the base to the thinness of cardboard, a clean cut here showing a hole as if lately pierced by a knife. It seems yellowed by age. It is of fairly symmetrical shape, 13 inches high, 32 inches in circumference, and two inches across the mouth, weighing three pounds.

Mingled with the earth which had fallen into it were many fragments of bone of comparatively large size, as large as could be made to pass through the mouth of the jar. These included frag-

ments of a skull; a piece of the jaw-bone with one tooth still in place; many smaller bits of bone; fragments of charcoal; a perfect arrowhead showing evidence of having been in the fire. The ashes in both jars are mingled too closely with earth to be easily detected.

The Diegueños learned their ceremonial religion from the Luiseños; but their habit of urn-burial they must have brought with them from an earlier home, no trace of these jars being found among the Luiseños. Both tribes burned and then buried their dead; but with the Luiseños it was the custom to dig a shallow grave, building over it the funeral pyre; and when the remains were consumed the ashes were buried in the same spot; while the Diegueños, as has been said, collected the ashes with the unconsumed bones, placed them in pottery jars, and buried them in secret places known only to a few.

WATERBURY,
CONNECTICUT.

A THEORY OF THE ORIGIN OF CHINESE WRITING[1]

By BERTHOLD LAUFER

It is not my purpose in this paper to initiate the reader into the mysteries of Chinese writing, nor to present a feat of sinological erudition. I merely wish to illustrate the application of a principle derived from the investigation of primitive ornamentation to the question of the origin of ancient Chinese writing.

Every casual observer will be impressed by the decidedly ornamental and picturesque feature of Chinese characters; and this observation coincides perfectly with the view held by the Chinese themselves, that writing is an art — a decorative art — which is as eagerly aspired to, and occupies the same high rank, as painting. The art of painting itself received a strong impetus from that of penmanship, and is still markedly graphic in character. All the famous painters have at the same time been noted calligraphists; and their autographs, one or two words dashed off with a bold stroke of the brush, excite as much admiration and are as greatly prized as their sketches or water-colors. Writing, consequently, offered the first field for the practice of art: it was the beginning of drawing and painting; hence in view of this fact we are justified in questioning its claims, from the anthropological viewpoint, of the development of decorative art.

For such a study we must entirely eliminate the modern forms of characters, which have been in use for two thousand years, and turn to the oldest existing specimens of writing, which are handed down on the bronzes of the Shang dynasty, dating from the third millennium before Christ. At that early age the formation of writing was completed; all further stages in its development are either new combinations or simplifications and changes of form conditional upon the changes in writing implements. The invention of the writing-brush, of ink, and of rag-paper, necessarily produced a

[1] Read at the meeting of the New York Academy of Sciences, March 25, 1907.

tremendous effect on the shaping of characters, with a tendency toward more rounded, graceful, and pleasing forms; while the oldest writing materials — like bamboo, wood, stone, and bronze, later on also silk — inscribed with a clumsy stylus and varnish, certainly allowed of only rudely executed characters. From this field an abundant supply of examples could be furnished on the question as to how ornaments change under the influence of new technique and material.

Another point that must appeal to the anthropologist is the fact that the Chinese have anticipated us, dissected, analyzed, and interpreted all their characters in numerous philological works commanding high respect. From the results of their painstaking research, foreign scholars have elaborated their system of writing, and usually have adhered to the native interpretations with implicit faith. But these interpretations, however ingenious and convincing they may at first seem, have only a relative value as personal impressions or popular traditions. Chinese scholars began with deliberation to reflect upon the composition and meaning of their characters, and to arrange them in analytical dictionaries, as late as post-Christian times, after writing itself had been in constant use for at least three thousand years; so that practically they could have known nothing about its original growth. What they have to say concerning this point is equivalent to the oral interpretations that we now receive from primitive tribes regarding the signification of their ornamental patterns, and must be regarded in the same critical light. The agreement between the two phenomena is so close that, just as different members of a tribe or of different tribes of the same stock may ascribe to the same ornament a different meaning, various Chinese authors give widely varying and sometimes contradictory explanations of the symbolism underlying their characters; and the traditions crystallizing around them have oscillated and also changed at times.

Chinese writing is not the result of one and the same principle, nor the product of one homogeneous mold; several factors have combined toward its production, and during a period covering many centuries. The most efficient method of construction was by means of a large number of phonetic elements combined with ideographic

signs. Nearly nine-tenths of all the characters now existing are formed on the basis of this principle. If we eliminate this and other comparatively recent developments, we come upon a group of about six hundred simpler signs, called by the Chinese "pictures of objects," which admit of no reduction into single components.

It is on this limited class of characters that European sinologues have founded the theory of a pictographic origin of Chinese writing, which, for the rest, is merely the reiteration of what the Chinese themselves think on the subject. It is asserted that these characters, now conventionalized in drawing, abbreviated, and disfigured, were developed from an original realistic picture portraying the object which the character is intended to represent. It will be readily seen that here we have the same condition of things, and the same theory, as formerly advanced regarding the origin of primitive ornament, when many conventional patterns, through the process of evolution, were traced back to the realistic prototype from which the pattern was named; and I am inclined toward the conviction that, just as we were obliged to dispel that belief, we shall be compelled to abandon the long-cherished theory of the pictographic origin of Chinese writing. Not that I would transfer merely through analogy the results of research in primitive art to the problem under consideration, but I wish to substantiate my belief with the evidence accruing from this particular field, and thus corroborate what has been ascertained from a study of the ornamentation of modern times.

The proposition that the six hundred primitive symbols were evolved from real pictures is not borne out by the facts, as they are clearly laid down in the ancient bronze inscriptions of the Shang period. Among the characters there preserved we meet with no expression of realism, with no adequate likeness or full figure, but only with symbols consisting of brief, sketchy, and shadowy outlines — conventional designs in which no sort of development from a natural picture to a state of gradual conventionalization can be traced. In most cases such a development would be materially impossible and illusory at the outset. What could it signify in general, and to primitive man in particular, to speak of reproducing a representation true to nature — of water, river, cloud, wind, earth,

metal, fire, and many others that we find among the earliest attempts of Chinese drawing? He must needs turn, with no other alternative, to conventional symbols to express the ideas of such objects. In fact, any realistic representations that could be construed as having preceded writing, and finally resulted in it, do not exist, and have never existed. They do not even exist as survivals in art, and if they ever did we should justly expect there to discover them. Ancient art, however, is in perfect harmony with ancient writing. As all primeval characters represent conventional designs, so is all early Chinese art as decidedly conventional and traditional as any art can be; and I may go a step farther by making bold to say that in the art prior to our era, illustrative of a development extending over three thousand years, there is not a trace of realism or of naturalism apparent in any artistic production. All patterns are either strictly geometrical or consist of animals and monsters conventionalized to extremes, while the human figure plays hardly any conspicuous rôle. Realism appeared in Chinese art only a few centuries after the beginning of the Christian era, in the works of prominent individual artists, as though it were the result of a reaction directed against the monotonous traditionalism of the older national art. Not one natural bird, not a single natural tree or flower, do we discover in the archaic period, the Han dynasty included, until, in the seventh century, the great painters of lifelike birds and flowers arise in the time of the T'ang.

The opinion that conventional forms are evolved from realistic representations is without substantial foundation, and is refuted, so far as China is concerned, by historical evidences such as these. If realism in art proves to be the product of such recent times, it is difficult to imagine how it could have existed during the epoch of the embryonic formation of writing, whose beginnings must be conjectured to have been at least in the fourth millenium B. C. So that there is nothing left for us but to conclude that the oldest forms extant are also identical with the earliest primeval forms, which of course had no predecessors. These forms, if we analyze them fairly, are composed of a certain number of lines, strokes, dots, combinations of these, and simple ornamental figures which are variously interpreted as certain objects or are named after them. Rows of

dots, for example, according to the different ways in which they are surrounded by lines, are identified with raindrops in the one case, with grain and rice in two other cases, and, in still other combinations, with sparks of fire or nuggets of metal. It will be recognized that it was not the picture of an object, or any attempt to draw a life-like design, that was the primary agency in the formation of writing, but a group of conventional ornamental forms. These received individual names by which to distinguish them one from another, the name being suggested by a process of association, in the primitive mind, of the design with the object to which the name referred. Thus, naturally, a vertical stroke would suggest the stem of a tree or a piece of wood; a curved line, a snake or a river; a zigzag line, the top of a mountain. This designation adhered to the ornament traditionally, and name and design finally became so thoroughly yoked together that the symbol called to mind the name, and the name the symbol, until they became inseparably united. I will not dwell at length on the final process that led to the conception of ornaments as true writing, in which the design was fixed at last as a character, and its name was substituted by the word conveying the idea of the object that this name implied. This was by no means an abstract process of intentional rationalism, but a development as purely emotional as the original creation of ornaments. It was doubtless prompted by the early existence of an elaborate system of ritual symbolism and by the facts that ornamental combinations and compositions are treated as legible rebuses which have dominated the art and religious customs of China from the days of antiquity until the present time. Whatever the psychical basis of this concluding step may have been, I think we may say now that the beginnings of Chinese writing are not pictographic, but ornamental and symbolic.

This theory receives strong corroboration from two other ideographic systems of writing occurring in eastern Asia — that of the Lolo and that of the Miaotse. Of the latter, we have a single specimen preserved in a Chinese book of the year 1683, giving two short songs in the original script, with an interlinear version in Chinese. The Lolo writing, consisting of about three thousand characters, has become better known through the investigations of

Father Vial, who sees in it one of the oldest forms of Chinese writing; while other scholars consider it as adaptations to and reconstructions of ancient Chinese characters. Although traditionally its invention is attributed to a Chinese who lived about the year 550, there is no resemblance whatever between Lolo and Chinese or between Lolo and Miaotse characters. The Lolo and Miaotse symbols are quite independent and original in their outward structure, and no doubt originally represented indigenous ornaments of those particular tribes. The stimulus of adapting these ornamental designs to the purposes of writing was unquestionably received from the Chinese, while the forms themselves were autochthonous. This supposition accounts as well for the above tradition as for the facts as we find them at present, and in my opinion there is no other possible way of explaining them.

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LAST LIVING ECHOES OF THE NATICK

By J. DYNELEY PRINCE

In his interesting Introduction to Trumbull's *Natick Dictionary* (pp. xii–xiii), the Reverend Edward Everett Hale states that the native community of Mashpee Indians, occupying the town of Mashpee on Cape Cod, has now lost every trace of the old Indian customs and that at the present time "no word of the language of their race is spoken." In short, that not one of the Mashpee Indians has "any further knowledge of it [the language] than does any other New Englander."

Mr Frank G. Speck, at my instigation, visited the community of Mashpee from March 28 until April 1, 1907, and, somewhat to my surprise, has returned bringing a vocabulary of twenty-nine distinctly Natick words which he, with great difficulty, succeeded in collecting from five aged persons, viz, Roxie Nye (85 years), George Okrey = Oakley? (90 years), Lydia Keeter (88 years), Rebecca Amos, and John Booker, an old man of negro blood. Mr Speck's most searching questionings among some fifteen families of the Indian town failed to bring to light more than is herein given, and it is extremely doubtful whether anything further is now known of the early language.

This community at Mashpee is about all that remains of the eastern Massachusetts and Cape Cod tribes and clans, although there is still an Indian remnant at Gay Head on Martha's Vineyard which, however, consists probably more of Narragansett stock than of the Natick strain. Of the total number of Indians at Mashpee, about two-thirds exhibit markedly Indian characteristics. Mr Speck states, in fact, that many of these people look almost like full-blood Algonquins, although there is a strong admixture of negro blood which in the end, he thinks, is bound to predominate. There can be no doubt, however, that some of the Mashpee family-names are distinctly of Indian derivation, viz.: Pognet, Attaquin, Queppish, Webquish, Squib, Keeter, Popnonet, and perhaps also Toby.

Dr Hale's statement that the Natick has not been spoken for a long period is literally correct, as there is no one now living, who, for example, like Mrs Fielding of the Pequot-Mohegan settlement at Mohegan, Connecticut,[1] can talk Indian *consecutively;* but, on the other hand, there still remains in the memories of some of the older people much that is interesting concerning the ancient customs, and, contrary to Dr Hale's statement, at least twenty-nine isolated words of the old speech.

The town of Mashpee, which, by the bye, is self-governing and a model of its kind, is situated at the foot of Mashpee lake, a site which was an ancient camping-place of the Indians. This is evidenced by the frequent discovery of stone implements in the fields bordering the Mashpee river, which is the outlet of the lake. The oldest people still remember the original Indian houses (still called *wïgïwâm*) which they say were of two sorts. One form of house was constructed of poles, leaned together and covered with cedar bark, leaving a smoke-vent at the top, and an inverted V-shaped opening at the bottom for ingress and egress. This style of lodge was seldom more than ten feet in diameter. The second kind of house, which was more commodious, was made of hickory saplings arched and bound in a complex dome-shaped framework. The top and sides were covered with bunches of tightly bound grass. This house also had a smoke-vent in the roof. Around the sides of this larger and more permanent lodge stood beds of sapling framework, supported by crotched sticks. The fireplace was in the center, and near it lay a green stick (*känütäñk*), about three feet long and supplied with a crook at the end, with which to stir the ashes and embers. Scoops, ladles, variously shaped wooden bowls, twilled baskets, and mats woven of corn-husks constituted the chief household appurtenances remembered by the old people to-day.

The Indians also used large back-baskets with narrow necks, having a bale running outside and across the bottom with a widened portion at the end where it passed across the forehead or chest of the carrier. Several types of these back-baskets are made and in

[1] See Prince and Speck in *American Anthropologist*, V, 193-212; VI, 18-45, 469-476. On the remnants of the Mohican dialect in Connecticut, see Prince and Speck in *Proc. Amer. Philos. Soc.*, 1903, 346-352.

use to-day at Mashpee. Furthermore, the older people remember the wooden mortars, hollowed from logs with the bark left on, and also the pestles made of hickory. They also recall certain long smooth stones of very ancient origin which were used as pestles.

Corn was their chief staple and was prepared in various ways, sometimes pounded into flour-meal (*nókïk*) and boiled into porridge (*sämp*) or else cooked whole with beans (*sukïtäc* = "succatash"). Game was sometimes cooked by suspending it over the fire on a thong; it was then kept turning by twisting and untwisting the thong.

Their canoes were made of hollowed white-pine trunks. If the trees were not large enough, two such trunks were shaped and fastened together lengthwise catamaran-fashion. In these canoes they went night-fishing (*wïkwâsïn*), attracting the fish within club-range or bow-shot by means of pine-knot torches fastened at the prow.

The only mention the present Mashpee authorities make of former religious beliefs is that the spirits of the departed (*tcipai*) frequently appeared in the paths of the living, and that such ghosts required propitiation before they could be induced to clear the way. The ancient Indians, they say, were always telling of meeting spirits on their journeys. Consequently, a religious practice grew out of this belief, viz, that of erecting great square flat-topped lodges covered with brush at certain points along their accustomed roads or paths. At these the Indians used to stop and deposit some piece of property or food, or else pour out a libation of whisky. They also held religious meetings and carousals in these lodges. Such Mashpee of to-day as are superstitiously inclined still observe the custom of throwing a twig or branch upon the rotting framework, or on the former sites of these spirit-lodges, whenever they pass by.

In noting the following Mashpee-Natick words and sentences, Mr Speck has observed the usual system, viz: *â*, closed like *a* in 'ball'; *ä*, like *a* in 'cat'; *u*, like *u* in 'put'; *ù*, like *u* in 'but'; *ï*, like *i* in 'pin'; *ñ* = palatal nasal in *ng*; *tc*, like *ch* in 'church'; *c*, like *sh* in 'she'.

GLOSSARY

Àtuk 'deer' = N.[1] *ahtuk*; Narr. *attuck*; Pass. *attuk*.

[1] N. = Natick; Narr. = Narragansett; Aben. = Canadian Abenaki; Pen. = Penobscot; Pass. = Passamaquoddy.

Hāncâ 'come in! = N. *howan*, interr. pron. 'who?' + exclam. *chuh* 'ho!' See Trumbull, Natick Dictionary, 277. *Hāncâ*, therefore, means lit. 'who ho?'

Kânútâñk 'fire-poker; long wooden crooked stick' = N. *kenuhtugq* 'sharp wooden pin' (Trumbull, 33).

Kwâ'hâg 'clams'. Evidently a corruption of Narr. *poquauhock* 'clams.' This word also existed in the Long Island dialect. Cf. the place-name *Quogue*.

Mâcä'nīk 'rabbits'; apparently not a plural in *-k*. This must be the same word as *mishanneke* (Narr.) and N. *mishánnek* 'squirrel.' I derive it from the same stem as in N. *nehnekinnau* 'he scratches.' The question arises, whether Mr Speck's informant was correct in applying it to a rabbit, for which Trumbull gives no equivalent. If it means 'scratcher' = 'digger', it would apply well to the digging rodent.

Nôkīk 'dried pounded corn' = N. *nuhkik*. A most interesting survival. See Prince in Proc. Amer. Philos. Soc., 1903, 350 = *rutig* in the corrupt Mohican dialect still surviving in the mouth of James Harris of Kent, Litchfield Co., Conn. = Peq. *yokeg*.

Nut 'fire' = N. *natau, nuteau;* also Narr. *note* and *yote*. Cf. the Peq. *wiyút* 'fire.' Note the interchange of N. *n* and Peq. *y*.

Pâpus and *Pâmpus* 'baby' of course = Narr. *papoos;* Stiles *puppous;* N. *papeases*. Evidently a reduplication of the root *pea* 'little' + the diminutive suffix *-s, sis*, seen also in Aben. *piusessit*. The nasalized form *pâmpus* is peculiar perhaps to the late Mashpee dialect.

Sämp 'dried pounded corn' = Narr. *nasáump* 'meal-soup' = N. *saupáen* 'soft substance.' Cf. the old Dutch loan form *suppaen*, pron. *suppawn* and still used in northern New Jersey for corn-soup.

Skätcimi 'how do you do?' Evidently a half remembered form containing the root of N. *kesuk* 'day.' It probably meant 'good-day.'

Skĕ'tciyan 'how do you do?' The same as the above, only containing the 2d pers. participial ending *-an*.

Sûkĭtăc 'corn' and 'bean soup porridge; boiled corn.' A well known New England word. It is the Narr. *m'sickquatash* 'something beaten up.' Cf. *suquttahham* 'he beats it to pieces.'

Tă'bât 'thank you' = N. *tabuttantum* 'he is thankful.' Cf. Peq. *tahbut ne* 'thank you.' It is from *tapi* 'enough' + the ending *-antum*, indicating a mental condition. *Tă'bât* in Mashpee is a shorter form = *tapi* + *t* of the 3d pers. Note the Mashpee sentence *tâbât enhi'mât ânkútci* 'thank you very much.' This seems to contain a verb in the 1st pers., as indicated by the prefix *en* in *enhi'mât*. I regard *enhi'mât* as a corrup-

tion of N. *enhettamun* 'I speak' or 'say it' (see Trumbull, 27). *Ân-kútci* is *en* + *kutci* = *kehche* 'chief' = 'my chief,' viz, 'thanks I speak it my chief.' *Tâbât enmâhitcnâk* 'thank you, master' contains *tâbât* + the 1st pers. of a corrupted form of N. *magw* 'give, offer.' I believe the ending *-n.ik* in the form *enmâhitcnâk* is the echo of a second person plural = 'I offer it to you.'

Tâ'cânt 'child' is probably the survival of an original word with a wrong meaning applied to it. In N. *tahshe, tohsu* means 'how much?' Perhaps an error on the part of Mr Speck's informant.

Tâ'mpâm 'line to hold a back-basket,' which was carried by a strap or line resting against the forehead or chest. This is the same root as in Aben. *madomba*, and appears in Canadian English in the compound *tump-line*.

Titciwañk 'dish-cloth.' Probably from Eng. *dish* + the ending *wañk* (?).

Tûkkâm 'basket material; white-oak splints' = N. *wuttuhq, wuttuk* 'bough, branch' (Trumbull, 228).

Tci'nkcu 'daughter' undoubtedly = N. *kehche-nunsqua* 'large girl; grown girl' and not specifically 'daughter.'

Tcipai 'spirit' appears in N. *chepi-ohke* 'spirit-land.' Cf. Peq. *jibái-ohke*. *Tcipai* survives also in *tcipai wâñkcâs* 'spirit-fox,' referring to the phosphorescent glow of rotten wood. As a sign of death to the beholder, this is known in Cape Cod folk-lore as 'fox-fire.'

Wâmp 'devil' (?) in a proper name must = the ending *-womp* as seen in N. *mugqwomp* 'chief,' from which is derived the American slang *mugwump*. This *wamp, womp* = Aben. *-ômba* (Pen. *-âbe*) in Aben. *alnômba* 'Indian.' Cf. Pass. *skit-ap* 'man'; Delaware *len-âpe* 'man.'

Wâñkcâs 'fox' = N. *wonkqussis, wonksis* 'fox.'

Wi'gîwâm 'house' is a mixture of the common English *wigwam*, from Aben. *wigwâm* and the older Natick *wekuwomut* 'in his house'; lit. 'where he lives.' Trumbull gives N. *wetu* as the short form 'his house.' In Aben., Pass., etc. the stem *wig, wik* = 'live, dwell.'

Wikwâsin 'night fishing by torch-light' contains the N. *wequai* 'light,' seen in Eliot's Bible, Gen. 1, 4. Cf. Narr. *wequâi*.

Witcâk 'woodchuck' must be a combination of English *woodchuck* which is originally Algonquian + N. *ockqutchaun* (Trumbull, 277).

There can be no doubt that the words herein given which have lingered in the memories of these few old Indian descendants are original Natick, in some cases altered from the primitive speech,

but still surprisingly recognizable. *Sämp* and *sùkïtäc*, of course, might be survivals common among the English New Englanders. One very important point seems to be brought out by these tattered shreds of a long dead language. That is, that the first personal verbal prefix, which is given by Eliot as *ne-*, was pronounced, at least in the Eastern dialect, as *àn*, with the inherent sound of the *n*, rather than as *n* followed by a vowel (cf. s. v. *tâbat*).

The thanks of all Americanists who are interested in the study of Algonquian are due to Mr Speck, who, by his trained skill in eliciting information from unintelligent and aged persons, has succeeded in rescuing from oblivion these last echoes of a forgotten speech which once played a notable part in the history of this country.

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THOMAS JEFFERSON'S ETHNOLOGICAL OPINIONS AND ACTIVITIES

By ALEXANDER F. CHAMBERLAIN

The third President of the United States left behind him the following inscription, intended for his own tomb :

HERE LIES BURIED
THOMAS JEFFERSON,
AUTHOR OF THE DECLARATION OF AMERICAN INDEPENDENCE, OF THE STATUTE
OF VIRGINIA FOR RELIGIOUS FREEDOM,
AND FATHER OF THE UNIVERSITY OF VIRGINIA.

But these three great achievements by no means summed up his activities. He was extremely interested in the science of his day, natural history in particular. He devoted some time to the consideration of the ethnological problems involved in the history of the Red Man and the Negro in America, and it is with his activities of this character that the present article is intended to deal.

ARCHEOLOGIC

In his *Notes on Virginia*,[1] Jefferson refers to the "barrows of which many are to be found all over in this country," describing them in general, and several in particular ; he seems to have seen many of them himself. One, in his own neighborhood, situated "on the low grounds of the Rivanna, about two miles above its principal fork, and opposite to some hills, on which had been an Indian town," he personally opened and thoroughly examined in order to satisfy himself as to the correctness of opinions and traditions concerning their construction and their use. The account given by him of this investigation is characteristic of his inquiring and scientific attitude of mind. The details also show his great carefulness. The conclusion he came to about the Rivanna mound was :

[1] The edition referred to in this article is the eighth, published in 1801.

"Appearances certainly indicate that it has derived both origin and growth from the accustomary collection of bones, and their deposition of them together; that the first collection had been deposited on the common surface of the earth, a few stones put over it, and then a covering of earth, that the second had been laid on this, had covered more or less of it in proportion to the number of bones, and was then also covered with earth, and so on."

The facts observed caused him to reject the view that the mound covered only bones of those slain in battle (not a single weapon-wound was found), and also the idea that "it was the common sepulcher of a town, in which the bodies were placed upright, and touching each other." He noticed that a few stones found in the mound were "brought from a cliff a quarter of a mile off, and from the river, one eighth of a mile off." Also that infants were buried there, since a rib of an infant, part of the jaw of a child, which had not cut its teeth (the right half of the under jaw), etc., were discovered (pp. 142–147).

Races and Race-genius

In a letter to General Chastellux, dated Paris, June 7, 1785, Jefferson thus expresses himself on the general question of the degeneracy of animals in America:

"1. As to the degeneracy of the man of Europe transplanted to America, it is no part of Monsieur de Buffon's system. He goes, indeed, within one step of it, but he stops there. The Abbé Raynal alone has taken that step. Your knowledge of America enables you to judge this question, to say, whether the lower class of people in America are less informed and less susceptible of information, than the lower class in Europe; and whether those in America who have received such an education as that country can give, are less improved by it than Europeans of the same degree of education.

"2. As to the aboriginal man of America, I know of no respectable evidence on which the opinion of his inferiority of genius has been founded, but that of Don Ulloa. As to Robertson, he never was in America, he relates nothing on his own knowledge, he is a compiler only of the relations of others, and a mere translator of the opinions of Buffon. I should as soon, therefore, add the translations of Robertson to the witnesses of this fact, as himself. *Paw* [Pauw], the beginner of this charge, was a compiler from the works of others; and of the most un-

lucky description; for he seems to have read the writings of travellers, only to collect and publish their lies. It is really remarkable, that in three volumes 12mo, of small print, it is scarcely possible to find one truth, and yet, that the author should be able to produce authority for every fact he states, as he says he can.

"Don Ulloa's testimony is the most respectable. He wrote of what he saw, but he saw the Indian of South America only, and that after he had passed through ten generations of slavery. It is very unfair, from this sample, to judge of the natural genius of this race of men; and, after supposing that Don Ulloa had not sufficiently calculated the allowance which should be made for this circumstance, we do him no injury in considering the picture he draws of the present Indians of South America, as no picture of what their ancestors were three hundred years ago. It is in North America we are to seek their original character. And I am safe in affirming, that the proofs of genius given by the Indians of North America place them on a level with whites in the same uncultivated state.

"The North of Europe furnishes subjects enough for comparison with them, and for a proof of their equality. I have seen some thousands myself, and conversed much with them, and have found in them a masculine, sound understanding. I have had much information from men who have lived among them, and whose veracity and good sense were so far known to me, as to establish a reliance on their information. They have all agreed in bearing witness in favor of the genius of this people. As to their bodily strength, their manners rendering it disgraceful to labor, those muscles employed in labor will be weaker with them, than with the European laborer; but those which are exerted in the chase, and those faculties which are employed in chasing an enemy or a wild beast, in contriving ambuscades for him, and in carrying them through their execution, are much stronger than with us, because they are more exercised. I believe the Indian, then to be, in body and mind, equal to the white man.

"I have supposed the black man, in his present state, might not be so; but it would be hazardous to affirm, that, equally cultivated for a few generations, he would not become so.

"3. As to the inferiority of the other animals of America, without more facts, I can add nothing to that what I have said in my Notes."

In his *Notes on the State of Virginia* he discussed the same question, citing the passages referred to from Buffon and Ulloa, and answered their general contention in the following noteworthy argument (pp. 87–91):

"He [the Indian] is neither more defective in ardor, nor more impotent with his female, than the white reduced to the same diet and exercise: he is brave, when an enterprise depends on bravery; education with him making the point of honor consist in the destruction of an enemy by stratagem, and in the preservation of his own person free from injury; or perhaps this is nature; while it is education which teaches us to honor force more than finesse: he will defend himself against a host of enemies, always choosing to be killed, rather than to surrender, though it be to the whites, who he knows will treat him well: in other situations also he meets death with more deliberation, and endures torture with a firmness unknown almost to religious enthusiasm with us: he is affectionate to his children, careful of them, and indulgent in the extreme: his affection comprehends his other connections, weakening, as with us, from circle to circle, as they recede from the center: his friendships are strong and faithful to the uttermost extremity: his sensibility is keen, even the warriors weeping most bitterly on the loss of their children, though in general they endeavor to appear superior to human events: his vivacity and activity of mind is equal to ours in the same situation: hence his eagerness for hunting, and for games of chance. The women are submitted to unjust drudgery. This I believe is the case with every barbarous people. With such force is law. The stronger sex therefore imposes on the weaker. It is civilization alone which replaces women in the enjoyment of their natural equality. That first teaches us to subdue the selfish passions, and to respect those rights in others which we value in ourselves. Were we in equal barbarism, our females would be equal drudges. The man with them is less strong than with us, but their women stronger than ours; and both from the same obvious reason; because our man and their woman is habituated to labor, and formed by it. With both races the sex which is indulged with ease is least athletic. An Indian man is small in the hand and wrist, for the same reason for which a sailor is large and strong in the arms and shoulders, and a porter in the legs and thighs. They raise fewer children than we do. The causes of this are to be found not in a difference of nature, but of circumstance. The women very frequently attending the men in their parties of war and of hunting, child-bearing becomes extremely inconvenient to them. It is said, therefore, that they have learned the practice of procuring abortion by the use of some vegetable: and that it even extends to prevent conception for a considerable time after. During these parties they are exposed to numerous hazards, to excessive exertions, to the greatest extremities of hunger. Even at their homes the nation depends for food,

through a certain part of every year, on the gleanings of the forest: that is they experience a famine once in every year. With all animals, if the female be badly fed, or not fed at all, her young perish; and if both male and female be reduced to like want, generation becomes less active, less productive. To the obstacles then of want and hazard, which nature has opposed to the multiplication of wild animals, for the purpose of restraining their numbers within certain bounds, those of labor and of voluntary abortion are added with the Indian. No wonder then if they multiply less than we do. Where food is regularly supplied, a single farm will show more of cattle, than a whole country of forests can of buffaloes. The same Indian women, when married to white traders, who feed them and their children plentifully and regularly, who exempt them from excessive drudgery, who keep them stationary and unexposed to accident, produce and raise as many children as the white women. Instances are known, under these circumstances, of their rearing a dozen children. An inhuman practice once prevailed in this country, of making slaves of the Indians. It is a fact well known with us, that the Indian women so enslaved produced and raised as numerous families as either the whites or blacks among whom they lived. It has been said, that the Indians have less hair than the whites, except on the head. But this is a fact of which fair proof can scarcely be had. With them it is disgraceful to be hairy on the body. They say it likens them to hogs. They therefore pluck the hair as fast as it appears. But the traders who marry their women, and prevail on them to discontinue this practice, say that nature is the same with them as with the whites. Nor, if the fact be true, is the consequence necessary which has been drawn from it. Negroes have notoriously less hair than the whites; yet they are more ardent."

Another interesting argument is also put forward by Jefferson on behalf of the Indian:

"Before we condemn the Indians of this continent as wanting genius, we must consider that letters have not yet been introduced among them. Were we to compare them in their present state with the Europeans, north of the Alps, when the Roman arts and arms first crossed those mountains, the comparison would be unequal, because at that time those parts of Europe were swarming with numbers, because numbers produce emulation, and multiply the chances of improvement, and one improvement begets another. Yet, I may safely ask, how many good poets, how many able mathematicians, how many great inventors in arts or sciences, had Europe, north of the Alps, then produced? And it was sixteen centuries after this before a Newton could be formed."

He then adds the general statement:

"I do not mean to deny that there are varieties in the race of man, distinguished by their powers both of body and mind. I believe that there are, as I see to be the case in the races of other animals. I only mean to suggest a doubt, whether the bulk and faculties of animals depend on the side of the Atlantic on which their food happens to grow, or which furnishes the elements of which they are compounded? Whether nature has enlisted herself as a Cis- or Trans-Atlantic partisan? I am induced to suspect, that there has been more eloquence than sound reasoning displayed in support of this theory; that it is one of those cases where the judgment has been seduced by a glowing pen."

In his *Notes on the State of Virginia*, Jefferson compares the blacks with both the Indians and the whites. The blacks, he holds, seem inferior to the whites and Indians in reason and imagination, but equal to the whites in memory. Painting and sculpture and poetry and prose of a high order (neither Phillis Wheatley nor Ignatius Sancho have real rank in letters) are alike lacking in the American blacks, but "in music they are more generally gifted than the whites, with accurate ears for tune and time, and they have been found capable of imagining a small catch. Whether they will be equal to the composition of a more extensive run of melody, or of complicated harmony is yet to be proved." In connection with Negro music, Jefferson points out that "the instrument proper to them is the Banjar, which they brought hither from Africa, and which is the original of the guitar, its chords being precisely the four chords of the guitar" (p. 208). As a conclusion, he remarks:

"I advance it therefore as a suspicion only, that the blacks, whether originally a distinct race, or made distinct by time and circumstances, are inferior to the whites in the endowments both of body and mind."

The reason he employs the term "suspicion" is that a faculty, even more than a substance, requires many observations and careful examinations before general conclusions are justified: "To our reproach it must be said, that though for a century and a half we have had under our eyes the races of black and of red men, they have never yet been viewed by us as subjects of natural history." Even "the opinion that they are inferior in the faculties of reason and imagination, must be hazarded with great diffidence."

Another instance of the zeal and careful observation of facts by Jefferson is seen in his account of albinos in the *Notes on the State of Virginia* (pp. 107–108). Four he examined himself.

Method of Approach to Primitive Peoples

The enlightened character of Jefferson's ideas concerning the contact of the white race in the United States with the Indians of the great West is shown by the instructions given by him to Captain Meriwether Lewis in 1803, when the famous Lewis and Clark expedition was about to be organized. The following passage in the letter of instructions signed in June of that year has never received the attention it deserves from historians and ethnologists :[1]

"The commerce which may be carried on with the people inhabiting the line you will pursue renders a knowledge of these people important. You will therefore endeavour to make yourself acquainted, as far as a diligent pursuit of your journey shall admit,

With the names of the nations and their numbers ;

The extent and limits of their possessions ;

Their relations with other tribes or nations ;

Their language, traditions, monuments ;

Their ordinary occupations in agriculture, fishing, hunting, war, arts and the implements for these ;

Their food, clothing, and domestic accommodations ;

The diseases prevalent among them, and the remedies they use ;

Moral and physical circumstances which distinguish them from the tribes we know ;

Peculiarities in their laws, customs and dispositions ;

And articles of commerce they may need or furnish, and to what extent ;

And considering the interest which every nation has in extending and strengthening the authority of reason and justice among the people around them, it will be useful to acquire what knowledge you can of the state of morality, religion, and information among them, as it may better enable those who may endeavor to civilize and instruct them to adapt their measures to the existing notions and practices of those on whom they are to operate."

The closing words of the last sentence contain the core of a

[1] See, however, the article on "Bureau of American Ethnology" in *Handbook of American Indians*, pt. 1, 171, Washington, 1907.

sound and sane Indian policy, which the Government of the United States ought to have carried out faithfully and successfully. In the same letter Jefferson goes on to say :

"In all your intercourse with the natives, treat them in the most friendly and conciliatory manner which their own conduct will admit ; allay all jealousies as to the object of your journey ; satisfy them of its innocence ; make them acquainted with the position, extent, character, peaceable and commercial dispositions of the United States, of our wish to be neighbourly, friendly and useful to them, and of our dispositions to a commercial intercourse with them ; confer with them on the points most convenient as mutual emporiums and the articles of most desirable interchange for them and us. If a few of their influential chiefs, within practicable distance, wish to visit us, arrange such a visit with them, and furnish them with authority to call on our officers on their entering the United States, to have them conveyed to this place at the public expense. If any of them should wish to have some of their young people brought up with us, and taught such arts as may be useful to them, we will receive, instruct and take care of them. Such a mission, whether of influential chiefs or of young people, would give some security to your own party. Carry with you some matter of the kine-pox, inform those of them with whom you may be of its efficiency as a preservative from the small-pox and instruct and encourage them in the use of it. This may be especially done wherever you winter."

Jefferson's relations with the Cherokee are referred to by Mooney.[1] In 1808 "the Cherokee drew up their first brief written code of laws, modeled agreeably to the friendly suggestions of Jefferson."

Multiplicity of Indian Languages

In his *Notes on the State of Virginia* (p. 144) Jefferson thus writes concerning the languages of the aborigines :

"But imperfect as is our knowledge of the tongues spoken in America, it suffices to discover the following remarkable fact. Arranging them under the radical ones to which they may be palpably traced and doing the same by those of the red men of Asia, there will be found probably twenty in America, for one in Asia, of those radical languages, so called, because, if they were ever the same they have lost all resemblance to one another. A separation into dialects may be the work of a few ages only,

[1] *Myths of the Cherokee*, 101, 113, 1900.

but for two dialects to recede from one another till they have lost all vestiges of their common origin, must require an immense course of time; perhaps not less than many people give to the age of the earth. A greater number of those radical changes having taken place among the red men of America, proves them of greater antiquity than those of Asia."

He had previously observed:

"The resemblance between the Indians of America and the eastern inhabitants of Asia, would induce us to conjecture, that the former are the descendants of the latter, or the latter of the former; excepting indeed the Eskimaux, who, from the same circumstances of resemblance, and identity of language, must be derived from the Greenlanders, and these probably from some of the northern parts of the old continent. A knowledge of their several languages would be the most certain evidence of their derivation which could be produced. In fact, it is the best proof of the affinity of nations which ever can be referred to."

WORK IN THE FIELD

In Gallatin's "A Synopsis of the Indian Tribes of North America," published in the second volume (1836) of the *Transactions and Collections* (*Archæologia Americana*) *of the American Antiquarian Society*, part of the Mohican vocabulary is "supplied by the mutilated remnant of a comparative vocabulary compiled by Mr. Jefferson, in the library of the Philosophical Society of Philadelphia" (p. 36); the vocabulary of the Long Island Indians is chiefly taken from the MS. list of words "of a tribe called Unchagogs (by Mr. Wood), taken in 1792, by Mr. Jefferson, and in the possession of the American Philosophical Society." We are told also that "Mr. Jefferson states that the dialect differs a little from those of the Shinicooks of South Hampton, or of the Montauk's; and that these three tribes barely understood each other"; and Jefferson is also drawn on in part for the vocabularies of the Shawnee and Oneida, the "mutilated manuscript" again serving for both. Pilling, in his *Bibliography of the Algonquian Languages* (1891) gives the title of the "mutilated MS." as "Fragments of a Comparative Vocabulary of Several Indian Languages," and describes also a "Vocabulary of the Delawares of New Jersey," likewise in the library of the American Philosophical Society. Both it and the Long Island

vocabulary are really copies by Duponceau of Jefferson's original list. The Delaware vocabulary, dated December, 1792, contains some 250 words; the Unquachog, which was taken down by Jefferson on January 13, 1791, and of which the Bureau of American Ethnology also possesses a copy, is of peculiar interest, since at the time of its recording, we are told: "There remain but three persons who can speak its language; they are old women; from two of these brought together, this vocabulary was taken; a young woman of the same tribe was also present, who knew something of the language."

It appears that Jefferson's interest in American Indian linguistics was of early growth. In a letter to Mr Harris, April 18, 1806, he writes thus:

"At a very early period of my life, contemplating the history of the aboriginal inhabitants of America, I was led to believe that if there had ever been a relation between them and the men of colour in Asia, traces of it would be found in their several languages. I have therefore availed myself of every opportunity which has offered to obtain vocabularies of such tribes as have been within my reach, corresponding to a list then formed of about two hundred and fifty words. In this I have made such progress that within a year or two more I think to give to the public what I then shall have acquired."

Several years later (September 21, 1809) we find him writing to Dr B. S. Barton, the author of *New Views of the Origin of the Tribes and Nations of America* (Philadelphia, 1797), as follows:

"I received last night your favor of the 14th and would with all possible pleasure have communicated to you any part of the whole of the Indian vocabularies which I had collected, but an irreparable misfortune has deprived me of them. I have now been thirty years availing myself of every possible opportunity of procuring Indian vocabularies to the same set of words. My opportunities were probably better than will ever occur again to any person having the same desire. I had collected about fifty, and had digested most of them in collateral columns, and meant to have printed them the last year of my stay in Washington. But not having yet digested Captain Lewis's collection nor having leisure then to do it, I put it off till I should return home. The whole, as well digest as originals, were packed in a trunk of stationery, and sent round by water with about thirty other packages of my effects, from Washington, and while ascending

James river this package, on account of its weight and presumed precious contents, was singled out and stolen. The thief, being disappointed on opening it, threw into the river all its contents, of which he thought he could make no use. Among these were the whole of the vocabularies. Some leaves floated ashore and were found in the mud; but these were very few, and so defaced by the mud and water that no general use can ever be made of them."

From the evidence cited in this brief article it would appear that, both by reason of his published opinions and by his actual investigations, Thomas Jefferson is entitled to rank among the forerunners of the American school of anthropologists. And it is with a sort of poetic justice that the first real attempt to classify the American aborigines north of Mexico was published in 1836 by Albert Gallatin, who had been his Secretary of the Treasury.

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A FICTITIOUS RUIN IN GILA VALLEY, ARIZONA

By J. WALTER FEWKES

In examining the documentary accounts of Casa Grande and other ruins in what is now Pinal county, Arizona, the author's attention was attracted to certain lines in an anonymous Spanish document called the *Rudo Ensayo*.[1] The text of these lines, as published by Buckingham Smith (p. 19), is as follows:

"Cuentan aquellos *Pimas* de otra casa, de traza y fabrica mas peregrina, que dicen hallarse mucho mas arriba sobre dicho rio. Su figura es de un genero de Laberinto, cuyo plan, como lo pintan los Indios en la arena, es á la manera como va al margen; pero parece mas verisimil haber sido casa de plazer que de vivir en ella de asiento un gran Señor."

The English translations of this text that have appeared have been of great help to the author, but he has ventured to offer a new one with certain changes which may be closer to the original. He has found some variation in the reproductions of the text figure which is significant.[2]

The text given above may be translated as follows:

"Those Pimas tell of another house of more wonderful plan and construction which they say is found much farther up the river. Its figure is that of a kind of labyrinth, the plan of which, as they draw it on the sand, is in the style [like the accompanying cut] seen on the margin [of the

[1] *Rudo Ensayo, tentativa de una Prevencional Descripcion Geographica de la Provincia de Sonora*, San Augustin de la Florida, 1863. Buckingham Smith thus writes in his preface to this work: "The Historical Essay, now published for the first time, is one of the documents brought together in New Spain by a royal order of 1779, during the administration of Revilla-Gigedo. The collection is in the Department of State at Mexico and a duplicate exists in the Royal Academy of History at Madrid." The name of the author of the Rudo Ensayo (Rude Effort) is unknown, but it is generally supposed to be the work of Juan Mentuig or Nantoig, a priest at Guasavas, a mission in Sonora on a tributary of the Yaqui, and to have been written in 1761-62. The document appears to have been drawn largely from Padre Keller, who is known to have visited the region mentioned.

[2] Buckingham Smith in Schoolcraft, *Indian Tribes*, III, pp. 304-306, 1853. Eusebio Guiteras in *Records of the American Catholic Historical Society of Philadelphia*, V, pp. 110-264, 1894.

document]; but it is more probable that it was a house of amusement rather than the residence of a magnate."

The figure referred to in the above quotation, copies of the two variants of which are here reproduced (fig. 34) represents such an unusual type of house that the author was led to seek among the modern Pima Indians any information regarding it that might still survive in their traditions. He consulted an old Pima, popularly called Higgins,[1] one of the best informed men of the tribe, who had already furnished him valuable legends concerning Casa Grande and other ruins in the neighborhood. When Higgins was shown the figure and told the contents of the opening lines of the above quotation (the last clause being withheld), he responded, through the interpreter (Ralph Blackwater), that he knew of no ancient house

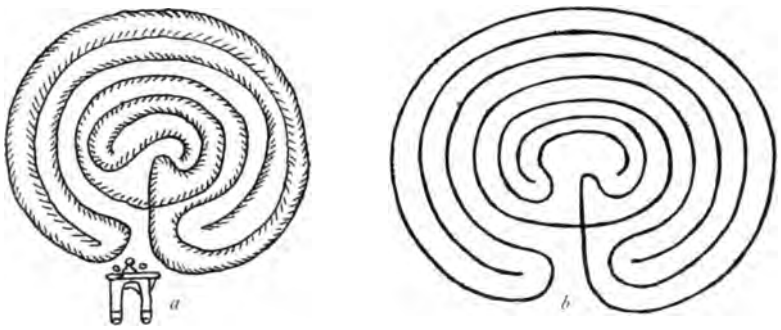


FIG. 34. — House of Tcuhu as given in the *Rudo Ensayo* (*a*, from Schoolcraft; *b*, from Buckingham Smith).

(*ʔa"ki*) in the region which had a ground-plan like that indicated in the figure. He was familiar, however, with a children's game that employed a similar figure traced in the sand. The Pima, he said, call the figure *Tcuhuki*, "House of Tcuhu," a cultus hero sometimes identified with Moctezuma.

It would appear that the informant on whom the writer of the *Rudo Ensayo* relied misunderstood the reply of the Pima living near Casa Grande in the eighteenth century to the question whether they knew of other houses like Casa Grande in the vicinity. They did not fully comprehend what the white man who questioned them desired, and under a misunderstanding traced on the sand the figure called Tcuhuki. This design was not intended to represent the

[1] Kamalkcak, "Thin Leather," a member of the Eagle clan.

ground-plan of a ruin but was a symbolic house used in a game. In the light of this information the closing lines of the above quotation were in a measure true — "it was a house of amusement rather than the residence of a magnate."

It is instructive to note at this point the closing four words of the above quotation, as they express ideas current among the Pima in the eighteenth century as well as to-day, that the Great Houses of the Gila, including Casa Grande, were abodes of "señores" or magnates. The names of some of these magnates and those of their Great Houses will be given in other publications, where the author will discuss the nature of the Gila valley ruins.



FIG. 35. — House of Tcuhu on wall of Casa Grande.

On obtaining this unexpected interpretation of the remarkable figure on the margin of the *Rudo Ensayo*, it occurred to the author to seek the same or like designs among the numerous etchings on rock or plastered walls of the aboriginal people dwelling along the Gila. The search was not a protracted one, for the walls of Casa Grande itself furnished a pertinent example.

When Casa Grande was first visited by Americans many Indian figures called "hieroglyphs" were observed on its walls. Some of the most exceptional of these have since disappeared, but others still remain. Among the latter there is one that may be considered as an equivalent of the figure above mentioned. This design, shown in the accompanying illustration (fig. 35), from a photograph, is rudely pecked on the surface of the wall of the inner room just above the former floor level in the second story. It is suggested that although the two differ in details, this figure, like that in the *Rudo Ensayo*, represents the "House of Tcuhu."

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ETHNOLOGICAL POSITION OF THE NATCHEZ INDIANS

By JOHN R. SWANTON

The highly developed monarchical government of the Natchez tribe of Indians and their possession of a national religion centering about a temple which reminds one in many ways of the temples of Mexico and Central America has given them an interest altogether out of proportion to their numbers. It is believed, therefore, that anything tending to elucidate the ethnological position of this people will be welcome.

William Bartram, who between 1773 and 1777 traveled through the regions bordering on the north shore of the Gulf of Mexico, states that the Creeks and the traders of his day considered Natchez a dialect of the Muskogi language,[1] and this opinion is expressed by several other early writers, but it would be difficult to say how much it owes to noticed resemblances and how much to the intimate relationship between Natchez and Creeks in later times. Schoolcraft in the following words expresses the same idea again, though he includes the Yuchi as well: "Another question in the classification of our Indian languages arises from the two small tribes of the Natchez and Utchees, the remnants of which have coalesced with the Muscogees. We may suppose that there was some ancient alliance to lead their minds to the act; if not some remote affinity, but in the present state of our knowledge they must be separately grouped."[2] In his classification of American languages, published in 1836,[3] Gallatin shows, by the way in which his Natchez vocabulary is inserted, that he considers the language distinct. In 1867, in one of his earliest speculations, Brinton attempted to establish a relationship between Natchez and Maya;[4] but six years afterward, on the basis of fuller material, obtained from the Natchez remnant among the Creeks through Mrs A. E. W. Robertson, he changed his views entirely and announced his belief that it was a Creek dia-

[1] Bartram, *Travels*, London, 1792, p. 463.

[2] Schoolcraft, *Indian Tribes*, II, p. 345, 1852.

[3] Gallatin in *Archaeologia Americana*, II, Cambridge, 1836.

[4] *Historical Magazine*, 2d series, 1867, I, pp. 16–18.

lect. This position he supported by about forty resemblances between the Natchez language and various Muskhogean dialects.[1] Nevertheless the conclusion was not endorsed by Gatschet, and since the latter had access to far more material than Brinton, his judgment was accepted by Powell in classifying the languages of northern America, and Natchez, along with Taensa, was given an independent position as the Natchesan stock.[2]

The material at Brinton's command when he made his comparisons was the old Gallatin vocabulary of 1836, on which his first speculation was based, and that collected by Mrs Robertson, the two totaling 365 words and phrases. Although excellent so far as it goes, this is only a small fraction of the Natchez material preserved, the two longest vocabularies, those of Pike, collected about 1861, and of Gatschet, collected in 1885, being still in manuscript.

An investigation of the latter two begun about a year ago had already convinced the present writer that Natchez would prove to be a widely divergent dialect of Muskhogean before Brinton's paper was brought to his attention. So convinced was he of this fact that he at once set to work to institute as thorough a comparison as the absence of an intimate knowledge of Muskogean grammar would permit, and he believes that the results justify his expectations. The Muskhogean vocabularies consulted are the manuscript Choctaw dictionary of Byington; the manuscript Muskogi, Hitchiti, Alibamu, and Koasati vocabularies of Gatschet; the manuscript vocabularies of Pike and Mrs Robertson, and the Creek and Hitchiti glossaries in Gatschet's *Creek Migration Legend*, besides incidental material from other sources.

Du Pratz, our best authority on the ethnology of the lower Mississippi in early French times, distinguishes between those tribes which used an *r* in their language and those that did not. None of the Muskhogean dialects which have come down to us contain this sound, but the same is not true of the other languages of the Mississippi valley itself southward of the Quapaw, so far as known,

[1] *Proceedings of the American Philosophical Society for 1873*, pp. 483–499.

[2] *Seventh Report Bureau of American Ethnology*, pp. 95–97. In *The American Antiquarian*, II, 76, 1879, Gatschet does indeed refer to the tribe as "of Maskoki affinity," perhaps following Brinton, but the statement is vague and his more mature conclusion appears to have been as given above.

except Natchez. All other Natchez sounds also find their equivalents in Muskhogean, unless we except *r*, which Gatschet occasionally uses instead of *f*, a use which is probably due to nothing more vital than slight differences in hearing on his part. Both *f* and *'l* occur more sparingly in Natchez than in the Muskhogean dialects, and are never initial sounds as is so commonly the case with them. Harmonic changes are almost confined to a replacement of *'l* by *l* on the one side and by *s* on the other. This phenomenon, if not found in Muskhogean, is at least present in other Southern languages.

From a grammatical point of view we may say that the richness of Muskhogean dialects in modes, tenses, and pronominal forms is hardly duplicated by Natchez in the shape in which we now have it, but the collectors of Natchez material seem to have made no attempt to obtain examples of any mode except the indicative, and there is scarcely an example of the future or of any forms to explain the use of pronominal subjects, objects, and indirect objects when such occur together. We must not look, therefore, for so many grammatical processes in our present Natchez material as in Muskhogean, but be satisfied if those that we do find are in agreement.

In both Natchez and Muskhogean there is no grammatical gender or case, while number in nouns is represented only by a collective applied principally to human beings. Both distinguish the diminutive in nouns and the augmentative in adjectives. In both verbal nouns are common. Possession, however, appears to be indicated very differently, since the pronouns are prefixed in Muskhogean and suffixed in Natchez, besides which the latter uses a special possessive suffix. Nevertheless, these differences are equalized by agreements in form to be noted presently. A marked peculiarity in Muskhogean, at least in the Choctaw dialect, is the presence of what Byington terms "article-pronouns," having as their roots *a* and *o*. These are not certainly recognizable in Natchez, but a suggestive resemblance to them is presented by two verbal auxiliaries. For reasons already given, the pronouns appear much more complicated in Muskhogean than in Natchez, but at least we may recognize independent pronouns, pronominal affixes, and possessive pronouns and adjectives in each. The pronominal affixes are prefixed in Natchez and usually occupy the same position in

Muskhogean, though not invariably. Three numbers — singular, dual, and plural — are found in both. The dual is sometimes indicated by a difference in stem, but more often by a special syllable placed after the corresponding pronominal prefix of the singular. The exclusive and inclusive are distinguished in Choctaw but not in Muskogi, Hitchiti, or Natchez. Verb stems are either at the very beginning of the word or are preceded by very few prefixes, rarely more than one. The Muskhogean dialects take a number of prepositional prefixes which appear to be almost wanting in Natchez, but the Natchez counterparts are independent prepositions which occur in the same situation relatively to the verb though not attached to it. In Choctaw two negative particles are used with the verb, one being placed before it and one after it, but in Muskogi, Hitchiti, and Natchez there is but one which is final. Muskhogean dialects are like Natchez in the considerable use they make of suffixed auxiliaries, and usually in prefixing the pronominal forms to these instead of to the principal stem. Muskhogean and Natchez also appear to agree in a very feeble development of demonstratives, only the most general ideas of nearness and remoteness being indicated. This leaves practically nothing in Natchez not represented in Muskhogean; but besides agreeing in the processes they have in common the two languages present an agreement no less striking in those which they mutually lack. Thus we find no sex gender as in the neighboring Tunica, no series of instrumental prefixes like Siouan, no morphological prefixes like many languages of the North Pacific coast, no strong line of demarkation between animate and inanimate as in Algonquian.

Before taking up actual formal resemblances, it is always of importance to analyze the languages to be considered into their constituent elements of stems and affixes. This I have done very thoroughly for Natchez, carding all forms containing the same stem together and leaving apart those single forms which cannot be definitely classified, although I might myself be of the opinion that they could be so classified with fuller information. After this process had been gone through it was found that the 2400 examples could be placed under fewer than 800 heads, of which it is safe to say that 100 may be placed on the doubtful list above referred to. As yet

I have not carried my study of the Muskhogean dialects so far. At the same time I feel able to announce that about 200 of the 700 well-established Natchez stems, i. e. between one-third and one-fourth, have been satisfactorily identified. This is exclusive of certain words such as *átasha* war-club, *yanása* bison, *kue'h* opossum, *pakachúlu* war leader, which have evidently been borrowed outright and three of which are found in Cherokee as well as in Muskhogean.

The following list contains some of the more prominent resemblances, but it must be remembered that only the stem is inserted unless there is some doubt regarding what constitutes the stem, when the supposed affixes are placed in parenthesis. Examples from Choctaw are indicated by the letter C placed afterward in parenthesis, those from Hitchiti by (H), those from Alibamu by (A), and those from Koasati by (K), while Muskogi examples are unmarked. The preponderance of Muskogi does not mean, however, that relationship with that language is closest, but that Muskogi and Natchez have been compared most thoroughly. The phonetics for the greater part resemble those for which the same signs are employed in English. *x* is the velar spirant. *'l* is similar to the North Pacific coast *ɬ* and is pronounced with the tip of the tongue just behind the lower teeth. An apostrophe (') before *h* means that the h is not silent. *ʌ* is the obscure sound of a; " a *u* barely sounded, and ⁿ a nasal similar to the French nasals.

NATCHEZ	MUSKHOGEAN
kuash, luminary	*hăsi*, luminary (all dialects)
kets, to break	*kats*, to break
kus or *gus*, to give	*kus*, to give (K)
kolom, a hollow	*kolŏ'k(bi)*, a hollow (H)
kut, to scratch, scrape a skin, shave	*kut*, *kot*, to clip, cut, saw off
kūsh, to comb	*kāsh*, *kas*, to comb, shave
kono, *kunu*, *kunû*, crooked, bent	*kun(hi)*, crooked, bent
hêsh(k"), navel	*hásh(iwa)*, navel
hā'k(au), tobacco	*hā'k(soma)*, tobacco (A)
hasêl, basket	*ʌsálʌ*, a basket(C)
hīntá, now	*hi'ntis*, now (H)
hash, old	*ahássi*, old
i"'ta, *int*, *intu*, tooth	*núti*, tooth, *inóti* (H)

itoxo, finished, gone, completed	*atáha*, completion, completed, end (C)
ishi, tail	*hádshi*, tail
ēt, house	*húti*, house, home
īsóx(u), lecherous	*hosŏ'k(li)*, lecherous
ichā'kst, frog	*shúkAti*, frog (C)
ananá-i, *hánanaī*, bullfrog	*hanŏ'ni* (H), *hánono* (K), bullfrog
oho, to cough or grunt	*oho*, to cough
we'h, roar of water, bark of dog	*wux*, roar of water, bark of dog
ên, fish	*nÁnA*, fish (C)
ŏ'wi, quail	*kowaī'(kl)*, quail; *kowá(si)* (H)
úwa, *úa*, cane	*kóha*, *kóa*, cane
ush, duck	*fudsó*, *fúcho*, duck
(ók)tu'l, *(úk)tu'l*, eye	*tú'l(ua)*, eye
wit, day	*níta*, day (all dialects)
únu, berry	*Áni*, small berry, fruit (C)
mem, to fan	*mai* and *ma*, to fan
mak, to say	*mak*, to say, speak, command
mā'ha(gi), plentifully, sufficiently	*máhi*, greatly, intensely, very
pes, *pe'l*, to sweep	*pas*, to brush, sweep
pet, to spread out,	*pat*, to spread out
paka, to float	*pakā'(ka)* to float (K)
póyi to boil	*Apúx(le)*, to boil (C), *abō's(ka)* (K)
pAkpÁk(ū), a large woodpecker	*búkhbágh(kī)*, a large woodpecker (H)
pûf, to blow	*pof*, *puf*, to blow
pi, to whip	*bi*, to whip, beat (H)
sáwī(s), locust	*sowī'sowī*, locust
sī'le, slippery elm	*shī'lo*, slippery elm (K)
sī'cha, dew	*sī'cho*, dew; *sī'chi* (H)
sha, deer,	*ichu*, deer; *itchi* (H)
chu, to suck	*chu*, *tsu*, to suck
chuf, to spit	*tuf*, to spit
chomōt, a hill	*chopŏ'k(si)*, hill (K)
chochŏ'ls(ki), a martin	*chuchú(ke)*, a martin (C) (K) (A)
ta, to strike	*ta*, to cut off
to, *tu*, to pound, beat	*to(náfäs)*, I bruise; *(isa)tó(ka)*, hammer

tisha, to sneeze	*(hak)tísh(kida)*, to sneeze
tu'l, *tol*, to push	*túl(äs)*, I cut down or push down
tok, dot, blotch	*tokó('li)*, *tokó(xli)*, dot, blotch, spotted
nā'l, stinging	*nA'lA*, stinging (C)
nê'hkwa, *nêk'a*, oil, fat, grease	*nihá*, oil, fat, grease; nia (C)
nAsh, *noch*, throat	*nok*, neck (all dialects)
ladsh, soft (like ripe fruit)	*luáts(ki)*, *lowáts(ki)*, soft (ripe fruit)
lāpAp straight	*lapō't(ki)*, straight
lēpê(p), to stick to	*lapá(chīe)*, to stick to (A), *lApá-(le)* (C)
lêp, limber	*ĥbá(ti)*, limber (H)

Concordance between numbers of examples, however, no matter how striking, is of less consequence than the kind of examples which agree and the manner of agreement. Thus the resemblance between Natchez *han*, or *ha*^{n}, 'to do,' or 'to make,' and Muskogi *hai* or *ha* which means the same thing, although not so close as many above cited, is of more importance owing to the general character of the verbs and the unlikelihood of one language borrowing such a form from the other. Similar is the resemblance between Natchez *ma*, 'it is so,' 'truth,' 'that,' and the Choctaw stem *m* or *ma*, each of which appears in a number of different connections as shown in the following list:

ENGLISH	NATCHEZ	MUSKHOGEAN
truth, it is so, thus	*má(gup)*	*(ó)m(äs)*, I am so; *mún-(go)*, not so
the same, this same one	*má(nawa)*	*má(tawa)*
nor, or	*má(gupāt)*	*mon(kat)*; *ma(tí'ka)* (H); *ma(úkotik)* (K)
and	*má(gup)*	*mam(i'k)* (H); *mámi(st)* (K)
no more	*má(gupu)*	*mam(ō'sin)* (H); *mō'm(sin)*
that is it	*ma(náa)*	*má(tis)*; *mó(lē'h)* (C)
there	*ma(nA')*	*ma*; *mamī'* (H); *mAn* (C)
also	*ma(nō'k)*	*mā'o*, also; *mō(k)* (H); *mō(ō'k)* (K)

Another of this class is *húcha*, or *hócha*, 'right,' 'straight,' and

Muskhogean *fácha*, meaning the same thing. Again compare the stems *hap* 'to bite,' *kimpa* 'to eat a variety,' and *kin* 'to eat one thing,' with Muskogi *impa* 'to eat one thing,' *pa* 'to eat many things,' and *kap* 'to bite.' Plainly an original common stem has here been worked over into somewhat different but for the greater part still recognizably related forms. In Muskhogean the stem of the verb 'to hear' is *po* or *poh*, and in Natchez it is *eple*; but when we turn to the Natchez word for 'ear' we find *ipok*, which at once singles out the consonant *p*, as the original stem consonant in Natchez. Note also the agreement in form between the demonstratives: Natchez, *ya*, *yáka* 'that,' *ka*, *káya* 'this,' *yaā* 'yonder'; Creek *ya* 'this'; Hitchiti *ak* 'that'; *yan* 'there,' and *yā'kta* 'yonder'; and Koasati *yaā'fa* 'yonder,' although they seem to be in some measure transposed. One of the most convincing stem resemblances is that between *ápi* 'stem,' 'trunk,' and *apichi* 'stem of pipe,' in Muskhogean, and the stems of the following series of Natchez words: *ébesh* 'bark,' *apiship* 'post-oak,' *apishu'l* 'peach tree,' *hipishúl* 'arrow-shaft.' The Natchez stem *î'cha* 'blood,' although different from the usual Creek word, reappears in Hitchiti *ichikchi* and in *cháti* or *chádi*, the ordinary Muskogi word meaning 'red.' Natchez *ish* 'hand,' 'finger,' is unlike the Muskogi words for those parts of the body but appears as the stem of the verb 'to take,' *ishi*, and in the Koassati derivative *ishíli* 'handle.' In both languages there is a surprisingly long series of vegetal names apparently sprung from the same root. In Natchez we find *ä'sha* 'hickory,' *ä'dsha* 'sweet potato,' *ástsa* or *ä́lch* 'grape'; in Muskhogean *ádshi* 'hickory,' *ássi* 'leaf,' *ádshi*, 'maize,' *ási* 'Ilex cassine' from which the "black drink" was extracted. The Muskogi word for potato is *áha*, and at first sight not very near *ä'dsha*, but it is quite possible that the two have been evolved from one form since there is an analogous case in the Natchez *ihi* 'mouth' and Hitchiti *ichi*, in which the form in *h* is Natchez and that with the sibilant Muskhogean. Again, Natchez *átul* leaf, is unlike the Muskogi *ássi* just given, but on the other hand it is quite near *ítu*, the common word for 'tree' or 'wood' in all Muskhogean dialects. Carrying this study a little farther we find that *chu*, the Natchez equivalent of

itu, while possibly related to that word, shows a closer affinity with Alabama *chúvi*, and Creek *chúli* or *chóli* 'pine tree,' and with *choki'li*, the Muskogi word for 'post.' The Natchez word for 'pine tree' is also *chúli*. Another case of altered significance in words apparently from the same original stems appears in the terms for 'people' and 'town.' Thus the Natchez word for 'people' is *tam*, quite distinct from Muskogi *isti*, but on the other hand almost identical with Choctaw *tamáha* 'town,' 'village,' and to complete the contrast we find Natchez *wásst*, *wást* 'town,' 'village,' differing from *tamáha* but very similar to *isti*. Both Natchez and Muskogi have different stems for the singular, dual, and plural of the verb 'to go.' The dual stems disagree, but those for the singular and plural resemble each other closely, being *a'h* and *ay* or *a'h*, and *pi* and *pi* or *api* respectively. Very interesting also is the derivation of *wash*, or *was*, the Natchez stem for 'dog,' 'horse,' 'bison,' 'cow,' etc. The corresponding Muskhogean terms are all formed on a different stem, that used for domestic animals being *wak*, supposed, probably correctly, to be derived from Spanish *vaca*. For a long time the Natchez form seemed irreconcilable with anything in Muskhogean until it was discovered that the word for 'wolf' in Gatschet's Alibamu and Koasati vocablaries was *wăshu*, evidently related on the other hand to Choctaw *neshóba*. Another series of resemblances develops in connection with the words for 'tobacco' and 'to smoke tobacco.' The Natchez stem signifying 'to smoke tobacco' is *puk* or *puka'h*. Compare with this the Creek words *pákwa* 'tobacco-pipe,' (*isti atsúli*) *pákpagi* 'old man's tobacco,' *múki* 'smoke,' 'dust,' (*hidshi im*)-*múki* 'tobacco-dust,' (*hidshin*) *moka'*(*dshäs*) 'I smoke tobacco.' *Hidshi* in these latter cases is the ordinary Muskogi word for tobacco. The same stem is also used by both for the word 'ball,' and though it would seem at first as if this might have been borrowed by one language or the other along with the ball game, a closer investigation shows that it is too deeply imbedded in each to be accounted for in that way unless the borrowing was very ancient. Thus we find in Natchez *pû'xsha*, *pû'sha* 'ball,' *popúpgup* 'globular,' or 'ball-shaped' (a duplicate form), *û'shush púxumgup* 'having a gibbosity, 'and in Muskogi *póko* ball,' *pulóksäs* 'I am round,' *'láti*

kubúkni 'having a gibbosity', *apókhi* 'a bunch on anything,' *pók'ha* 'brushwood in bunches.' Compare also Natchez *pa* 'to plant,' 'a crop,' whence is derived *pehélu* 'bread,' with Muskogi *páska* and Hitchiti *palásti* 'bread,' and note that the two latter agree together in a little more than the Natchez stem *pa*. Another case for comparison is Natchez *shóxoni* 'good,' 'handsome,' with *ichokóni* 'pretty,' in the same language, Choctaw *achúkma* 'good,' and *chokmáse* 'pretty,' and Koasati *kókanu* 'good.' The Natchez word for 'goose' is given as *sásak* by Pike and *lálak* by Gatschet. It at first seemed probable that the latter was the native Natchez term and the former borrowed from Muskogi *sásakwa*. Note, however, the way in which forms in *l* and *s* appear in different Muskhogean dialects. In Muskogi, as just noted, it is *sásakwa*, in Hitchiti it is *hasáli*, in Alibamu *shalákhla*, and in Choctaw *xaláklaha*. Of similar persistency are Natchez *tuna* 'thunder,' 'to thunder,' Muskogi *tinítki* and Hitchiti *tonóxkáxchi* 'thunder.' Compare these with three other Natchez stems *tulu* or *tulum* 'to roll,' *tuku* 'to roll (like a caster),' and *tu*, *to* 'to pound,' 'beat,' 'hammer,' and with their Muskhogean counterparts *tolúmida* 'to roll,' *tulúyäs* 'I am rolling,' *tonáfäs* 'I bruise,' and *isatóka* 'hammer.' Natchez *näsh* 'drizzling rain' seems to be related to both *wáshki* 'drizzling,' and *û'ski* 'rain,' in Muskogi. As striking as any similarity is the use of the stem of the verb 'to sleep,' which sometimes appears as *nu* or *no* and at others as *nush* or *nosh* in both languages. Thus we find in Natchez *nush* 'sleep,' *noa-éshias* 'a dream,' *tanóla* 'I sleep' (*ta* = 'I'), and in Muskogi *núdshita* 'sleep,' *anódshki* 'a dream,' *núsi* 'to sleep,' *nókis* 'I sleep.' Natchez *lc* 'to stand' is connected apparently with *lä* 'to put,' and *lá-ats* 'rest,' in the same language, and on the other hand with Muskogi *läikis* 'it is standing,' *lä'dshäs* 'I put,' *läikita* 'resting place.'

Natchez and Muskhogean numerals do not appear at first sight to present any points of similarity, but Brinton was probably upon the right track when he called attention to the resemblance between Natchez *witan* 'one,' and a Muskogi word for 'first,' "*hati-chiska*," because Natchez *witä'hua*, Muskogi *i'ta*, and Choctaw *mé'ta*, 'another,' all agree with them. Brinton is also probably correct in deducing *áwēti* 'two,' *nē'di* 'three,' and the latter

part of *kináwiti* 'four,' from the same stem; *óku* 'ten' is possibly from Choctaw *pokoli* 'ten,' abbreviated.

More important than resemblances between principal stems are those between affixes, because the likelihood of their having been borrowed is still less. It has been noted that Natchez and Muskhogean nouns have special diminutive suffixes. These agree in function but differ in form — Natchez *-inu;* Muskhogean *-udshi* or *-ushi.* The latter is equivalent to the Choctaw word for 'child,' but the former does not appear to occur independently. Turning to the Natchez equivalent for 'child,' however, we find it to be *dshichi,* while that for 'small,' 'little,' is *mudshi-u,* in both of which the root consonant of the Muskhogean suffix is prominent. The Natchez augmentative suffix after adjectives, *-in,* agrees quite closely with the Muskogi suffix *-sin,* which has the force of 'very.' The collective suffixes are farther apart, but although there appears to be little relation between Natchez *hni* (*chuná'hni* 'chiefs') and Muskogi *-álgi* (*Maskogálgi* 'the Muskogi people'), the resemblance of the former to Hitchiti *-a'li* (*Maskoka'li* 'the Muskogi,' *Kasi'hta'li* 'the Kasi'hta people') is much closer. However, the syllable *hni* is found with a number of Hitchiti pronouns, and although it cannot be said to indicate plurality, and the relationship to Natchez *hni* is uncertain, there is a strong suggestion that such may be the case. These personal pronouns are what Gatschet terms the subjective absolute pronouns and are as follows: *ā'ni, chi'hni, i'hni, pi'hni, chi'hnitáki, i'hnitáki.* Except in the third persons, which Gatschet does not give, the corresponding verbal prefixes lose *hni* and in the first person *-i.* The Natchez possessive suffix *-ish* (*hakuchúish,* 'maize, its stalk,' *ishinish* 'his') is almost the same as the Muskhogean stem *-dsh-,* meaning 'to possess' (*ō'dshäs* 'I possess'). The Natchez pronominal prefix of the second person singular (*pa-*) and the objective pronominal prefix of the first person singular (*ta-*) seem to be unlike anything in Muskhogean. The Natchez subjective pronominal prefix of the first person, *ya-* (*heloyáa* 'I am tired') is, however, very near the usual Muskogi prefix of the first person, *ä-,* (*hídshäs* 'I see,' *hodshífäs* 'I name'). Instead of *ya-* or *ta-* the stem of the Natchez possessive suffix in the first person is *ni* (*nisha* 'my'), which may perhaps be related to the Choctaw and Hitchiti

pronominal suffix *-li* (*únkalis* 'I halloo,' *áklilis* 'I think'), or the stem of the independent personal and possessive pronoun *Áno* 'I,' 'me,' 'mine.' In the third person there are two Natchez roots, *i-* and *na-*. The first is found only in independent pronouns or possessives, but it agrees in form with *i-* or *i*ⁿ-, the Muskogi objective possessive pronoun of the same person. *Na-* is plainly an indefinite (*tánaʿl* 'someone strikes,' *at pastnáʿl* 'someone has his legs crossed') and is found in Muskogi *náki* 'something,' *nábu* 'nobody,' the prefix *na-* or *nanta-* forming the *nomen actoris*, and in Chickasaw *nana* 'things,' 'persons.' The reflexive prefix in Natchez is *sh-* (*tuʿlteshú* 'I push myself,' *kilipnäʾshguk* 'having whirled himself around'), which may be compared with the Muskogi prefix as in *ichʾhäs* 'I shoot,' *ischʾhäs* 'I shoot back, in return.' The continuative verbal suffix *-ha* (*tchäʿl* 'seizing,' *käihawish* 'to gnaw') seems to reappear in Choctaw *-ha*ⁿ, although there it is more of a frequentative than a continuative. *Is-*, the Muskogi instrumental prefix, has been found in three Natchez words — *súkestaʿl* 'I am felling,' *supakátsʾhalish* 'to bore with,' 'borer,' *sapéʿltaʿl* 'I sweep with' — but further investigation will probably reveal more. The chance of such a suffix being borrowed is extremely slight. The commonest Natchez auxiliary, *-li* or *-ʿl*, is nearly the same as the Muskhogean *-li* (*talāʾlilis* 'I cause to be laid down,' 'I lay down,' *alokchukúlilis* 'I cause to rise up'). In a few cases in Natchez we find an auxiliary *-s* (*tsadiʾhtäs* 'I whet, sharpen,' *kútas* 'I take off'), which is perhaps the same as *-ʿl* owing to the phonetic change already alluded to. Or perhaps it is connected with the Creek suffixed auxiliary *-s*, 'to be' (*hatidshäs* 'I whiten,' and other examples already given). It is more likely, however, that this latter is represented by the Natchez infinitive suffix *-sh* or *-s*, 'to' (*shútʾhalish* 'to stretch out,' *patahakúsh* 'to cover' (as with wall paper). The Natchez auxiliary *g* or *ga*, 'to do' (*tuluptagúk* 'I have rolled,' *shtáʿlpagi* 'you stand') resembles the Muskogi causal *-ga* (*ōʾstîga* 'because there are four') in certain cases much closer than the assigned meanings of the two affixes would seem to warrant. The Natchez perfect suffix *-k* (*lúgagik* 'boiled,' *kilipnäshgúk* 'having whirled himself around') is exactly paralleled in function by the Muskogi *-ki*, (*ʿlámäs* 'I uncover,' *ʿlámki* 'open') and is perhaps connected on

the other hand with the Choctaw determinate or demonstrative 'that,' 'the.' The Natchez auxiliary suffix *-f* (*puf* 'to blow,' *púftaf* 'I blow') is very likely identical with the Choctaw auxiliary suffix *-h* for there are numerous cases in which the two sounds are confused or transposed in recording. It is barely possible, also, that the Choctaw suffix is represented in *-ho* or *-aho*, which indicates the immediate occurrence of an act in Natchez (*tasháho* 'I lie,' *ta'htáho* 'I follow'). The Natchez negative suffix *-āt* or *hāt* (*shóxuni* 'good,' *shoxunihāt* 'not good') is practically identical with the Hitchiti suffix *-it* (*adshakúntiti* 'unable to follow,' *chabátis* 'I do not like') and is nearly the same as the Choctaw negative particle *heto*. The Natchez infinitive suffix *-p* (*kwáship* 'sun', 'what shines', *kėtsgup* 'knuckle,' lit. 'a break') may be compared with what Gatschet calls the "medial suffix" *-pi* in Muskogi, in such a sentence as the following: *tcháti 'lakípit ō'dshin* 'the blood being much' (*cháti* 'blood,' *ō'dshin* 'being,' *'láko* 'large' (much). Natchez ordinals are usually formed by means of a suffix *-ish* (*áwiti* 'two,' *awiti-ish* 'second,' *láhanuf* 'six,' *láhanufi-ish* 'sixth'), Choctaw by means of a prefix or particle *isht-*, and Hitchiti by means of a prefix *is-* (*kolpági* 'seven,' *iskolapakíka* 'seventh,' *tuchíni* 'three,' *istuchináxa* 'the third'). The Choctaw "article pronouns" above referred to are divided into two classes depending on the root forms *a* and *o*, the former of which is definite, referring to something immediate and present, and the latter indefinite, applying to a considerable or indefinite period of time. The one Byington calls definite, the other distinctive. These are not improbably represented by two Natchez auxiliaries of identical form and analogous meaning. *a* is the usual auxiliary 'to be' (*mána táa* 'I am he, *helo* 'to be tired,' *helóyaa* 'I am tired'), but it occurs so frequently after nouns that it might easily be considered an article or demonstrative. The second sometimes appears after nouns also, but not frequently. It is usually found with verbs when the action covers some time or is repeated or habitual, though it appears to have been employed so long as to have lost much of its original significance: *tup* 'to cut,' *túp'hagu* 'a cutting,' *tulup* 'to roll,' *tulup-tagúk* 'I have rolled,' *wagat* 'tall,' *wagátgup* 'something tall.'

The results of this comparison of affixes may be tabulated as follows:

NATCHEZ	MUSKHOGEAN
Close Resemblances	
dshi, stem of words meaning 'small' and 'child'	*údshi, úshi*, 'son,' and diminutive suffix
-in, augmentative suffix to adjectives	*-sin*, adjective suffix with force of 'very'
-ish, possessive suffix	*dsh*, stem meaning 'to possess'
ya-, subjective personal pronominal prefix of 1st person	*ă-*, personal pronominal prefix of 1st person in Muskogi
i, root of independent personal pronoun of 3d person	*i-, iⁿ-*, objective possessive pronominal prefix of 3d person
na-, indefinite pronominal prefix of 3d person singular	*na*, indefinite pronominal affix
-li or *-'l*, suffixed causative auxiliary	*-li*, suffixed causative auxiliary
sa- or *su-*, instrumental prefix	*is-* or *si-*, instrumental prefix
-k, perfect suffix	*-ki*, Muskogi suffix with perfect signification; possibly Choctaw determinate or demonstrative meaning 'that,' 'the'
-āt or *-hāt*, negative suffix	*-it*, Hitchiti negative suffix; *heto*, negative particle in Choctaw
-ish, suffix to ordinal numerals	*is-*, Hitchiti prefix to ordinal numerals; *isht-*, Choctaw prefix or particle before ordinals
More Remote and Doubtful Resemblances	
-hni, collective suffix	*-a'li*, collective suffix in Hitchiti; *-hni*, suffix forming subjective absolute pronouns in Hitchiti
-ni, root of possessive suffix of 1st person singular	*áno*, I, me, mine, independent pronouns in Choctaw; *-li*, personal pronominal suffix of 1st person singular in Choctaw
ha-, continuative prefix	*haⁿ*, frequentative infix or suffix
-a, suffixed auxiliary, 'to be'	*a*, definite article pronoun in Choctaw
-u or *-o*, continuative auxiliary	*o*, distinctive article pronoun in Choctaw

sh-, reflective prefix or infix	*as-*, in *asitch'hās*, I shoot back, in return
-g, suffixed auxiliary 'to do'	*-ga*, causal suffix in Muskogi
-f, suffixed auxiliary; or *-ho*, *-aho*, suffix indicating the immediate present	*-h*, Choctaw auxiliary 'to be'
-s, suffixed auxiliary, possibly identical with auxiliary '*l*; or infinitive suffix *-sh*	*-s*, common verbal suffix in Muskogi
-p, *-pi*, suffix forming *nomen actoris*	*-pi*, suffix in Muskogi called by Gatschet "the medial suffix"

UNIDENTIFIED NATCHEZ AFFIXES

ta-, me *pa-*, you *tan-*, dual prefix *pi-*, plural prefix
-ti, suffix of unknown signification.

Further investigation would very likely destroy some of these apparent resemblances, but would probably reveal still more. The further the comparison is carried the more points in common seem to show themselves. But making all due allowances for mistakes, accidental resemblances, borrowing, and resemblances due to psychological causes, I think sufficient has been adduced to confirm Brinton's position of 1873 and place the relationship of Natchez to the Muskhogean dialects beyond reasonable doubt. The Muskhogean affinity of the Natchez people is confirmed to a slight degree also by their migration tradition recorded by Du Pratz, which brings them from the west, and by their employment of red and white to distinguish large social groupings having to do with war and peace respectively. These facts would have little force by themselves, but gain in significance in connection with the linguistic affinities just noted.

But if the evidence brought forward gives a fair presumption that the core of the Natchez state was Muskhogean, a question of even greater interest remains. Whence came the great differences between them and the other representatives of that linguistic family? These are not merely linguistic but social and religious as well. Although the Muskhogean family embraces some of the most highly organized Indian tribes, none of them held its chiefs in such esteem as the Natchez or were such slaves to them. Again, all the

Muskhogean tribes of which we have any full information were divided into totemic clans, but there is no good evidence that the Natchez possessed any. Their divisions resembled castes more than clans, and with the possible exception of the highest class, or Suns, totemism appears to have had nothing to do with these. Another point which differentiated them from most other Muskhogean tribes was the possession of and veneration for a temple which was made a special occasion for comment by every early traveler. Temples also existed among the Huma, Bayogoula, and Acolapissa, but apparently among no other Muskhogeans. The fact that these were all on or near the lower Mississippi is probably in itself significant, showing that that area was the seat of a culture different from what existed any distance east or west of it, a culture which the Natchez had imbibed in a higher degree than all their Muskhogean kinsmen, but which may have been already old when they reached the river.

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RECENT GEOLOGIC CHANGES AS AFFECTING THEORIES OF MAN'S DEVELOPMENT

By G. FREDERICK WRIGHT

The questions of the antiquity of man and of the origin of the races of mankind are largely dependent for their solutions on the date and character of recent geological events. The forces on which the evolution of mankind is dependent are too vague to afford any definite light either on the antiquity of man or on the date of the origin of the various races into which he was separated before the dawn of history; for the rate in the development of a species is directly dependent on the rate of the changes in the physical environment which preserves and accumulates the advantageous variations. It is a truism that prolonged uniformity of conditions will secure the prolonged life of a species or variety of plant or animal. The study, therefore, of geological changes is one of utmost importance for the biological evolutionist.

The Tertiary period was, for the greater part, one of comparatively permanent physical conditions, and likewise of comparative permanence of its animal species. For example, in central Europe numerous species of hyenas, rhinoceroses, and antelopes, and the great Machairodus, continued from Miocene all through the Pliocene into post-Pliocene times; while hippopotami and elephants continued through a good part of the Pliocene period, and in America rhinoceroses and camels ranged through both Miocene and Pliocene times. But all these and many more species became suddenly extinct in the brief post-Pliocene period, which was marked by the rapid accumulation and disappearance of the great ice-sheets of the Glacial epoch.

Evidence that the existence of man antedates the close of the Glacial epoch has continued to accumulate until few would now venture to question the reality of Glacial man. Positive evidence is now produced from Babylonia and central Asia, carrying a pretty high state of civilization 7,000 or 8,000 years before the Christian

era. At the same time geological investigations are accumulating evidence which brings the closing stages of the Glacial period down to 5,000 or 6,000 years before the Christian era. There can, for instance, be little reasonable doubt that glacial ice lingered over the Mohawk valley in central New York and over the lower St Lawrence valley so as to obstruct the drainage of the Great Lakes in that direction and turn it over into the Mississippi valley as late as 8,000 years ago; so that the discovery of human implements and skeletons in glacial deposits is no more startling than are the discoveries of the progress in human civilization made by the explorations in Babylonia. The Glacial epoch overlapped the human epoch to an indefinite extent; while the acknowledged recency of the close of the Glacial epoch makes it unsafe to draw any sweeping conclusions antagonistic to the evidence of Glacial man from his high state of advancement in certain arts, such as drawing and sculpture, and from the high development of his skull, for the positive evidence in Egypt and Babylonia reveals races of men and of domestic animals of highly developed varieties which were doubtless contemporaries with Glacial man in Europe and America. The negroid characteristics appear upon the earliest Egyptian monuments, while the Semitic and Turanian characteristics appear in the earliest ruins of Babylonia.

It is altogether probable that the races of mankind were all developed with great rapidity in the comparatively brief prehistoric period included in the Glacial epoch, and that the latter was itself a prominent factor in promoting and fixing those variations. This theory has been brought out with great force by Professor Raphael Pumpelly in his presidential address before the Geological Society of America in 1906, in which he maintains that the oases of central Asia have been favorable places for the isolation and rapid development of early races through their relation to the varying glacial conditions that have influenced them. From numerous lines of evidence it appears that the glaciers on the mountains of central Asia have had repeated cycles of increase and diminution resulting in corresponding increase and diminution in the size of the streams that irrigate the oases about their bases, and causing variations in the size of the lakes occupying the inclosed basins of the region.

It is precisely such changes in physical conditions that would most directly and rapidly affect the development of races of mankind in both their physical and mental characteristics. Necessity is the mother of invention, and the necessity of constant readjustment to these conditions would be the spur leading to that great range of discoveries which form so important a part of the life of mankind even in these later days. We fail to realize adequately the significance of the fact that nearly all our domestic plants and animals were developed by man and adapted to his purposes during this prehistoric period. It was in prehistoric times that all the essential principles of agriculture were discovered and the arts of spinning and weaving and housebuilding invented. Once discovered, these arts have served the human race with little change for 10,000 years. But it seems altogether likely that at the beginning they were made with a rapidity corresponding to that which through recent discoveries has transformed the whole face of civilization in the last hundred years.

In America the positive evidence of Glacial man has been collected from two rather widely separated epochs, namely, the Iowan and the Wisconsin period. The remains of man in the Iowan period have been found in the loess of the Missouri valley. Mr Gilder's discovery of human relics in the loess near Omaha, Nebraska, would seem to be so confirmatory of the evidence from Lansing, Kansas, that there could be no longer reasonable ground for doubting the Glacial age of the Lansing man, since the deposits of loess in the two places are substantially synchronous. At the same time it gives renewed importance to various earlier reported discoveries of implements in the loess of this period. One ground for rejecting the evidence of these discoveries has been the advanced character both of the implements and of the skulls.

This objection to the evidence has been given increased weight from the fact that the implements found at Trenton, New Jersey, and at Little Falls, Minnesota, which belong to the later Wisconsin stage of glaciation, are of a ruder type, indicating a more primitive stage of culture than appears in the earlier implements of the Iowan stage. But the differences in age need be only a few thousand years, and we are by no means compelled to suppose that the one

race was descended from the other, since the variation in the extent of glacial ice was a most potent factor effecting the migrations of early races or even their extermination. We have but to suppose these racial differentiations to have been substantially the same 10,000 years ago as they are now, as is actually shown by the discoveries in Egypt and Babylonia, to see how the migrations caused by the vicissitudes of the Glacial epoch could bring the relics of different degrees of culture into close contact with each other in geological depositions that were separated by long periods. The lapse of time since the Iowan stage of the Glacial epoch is very likely so small, as compared with the preceding period of man's existence, that we need not look for any great changes in his physical structure to have occurred since that epoch. In short, with our present knowledge of the recency of the Glacial epoch and the rapid change of conditions affecting man which it brought about, we are left very much in the dark concerning the influences that most affected the rate of the progress and development of primitive man.

OBERLIN, OHIO.

PRELIMINARY REPORT ON THE LANGUAGE AND MYTHOLOGY OF THE UPPER CHINOOK[1]

By EDWARD SAPIR

In the summer of 1905 I was commissioned by the Bureau of American Ethnology to continue the study of Chinookan linguistics and, incidentally, mythology, which had been begun some ten years ago by Professor Boas, and the results of which, so far as published, have appeared in "Chinook Texts" and "Kathlamet texts," both bulletins of the Bureau, and in Dr Swanton's "Morphology of the Chinook Verb" and Professor Boas' "Notes on the Chinook Vocabulary," both of which articles appear in the *American Anthropologist*.[2] This published material deals with the dialects of the Chinookan family spoken at or near the mouth of Columbia river. It was therefore desirable, in order to gain a somewhat more comprehensive idea of the peculiarities of Chinookan grammar, to devote study to the extreme eastern dialects.

The dialect or language to which the following notes refer is that spoken by the Indians formerly living on the northern shore of Columbia river, roughly speaking, from White Salmon river to the Long Narrows. These Indians, who are now on the Yakima reservation, Washington, called themselves *iɬáxluit*, the 1st per. sing. of which (*itcxluit*, 'I am an Iɬáxluit') is in all probability the "Echeloot" of Lewis and Clark. They are known by their Yakima and Klikitat neighbors (tribes of the Sahaptian stock) as *Wúcxam*, which, in its anglicized form of Wishram, or Wishham, is their common apellation to-day. The language spoken by them is, to all intents and purposes, the same as that of the Wasco on the other side of the river and of the White Salmon and Hood (or Dog)

[1] Read before the American Anthropological Association at Ithaca, New York, December, 1905. Published by permission of the Bureau of American Ethnology.

[2] Bureau of American Ethnology, Bulletins 20 and 26. *American Anthropologist*, N. S., II, 1900, pp. 199–237, and VI, 1904, pp. 118–147. The phonetic system followed in these works is used in this article. See either Bulletin for the key.

River Indians farther down the stream. More prominent dialectic differences appear when we get as far down as the cascades; the dialect of this locality may be considered transitional between the Wishram and the Clackamas of the Willamette region.

Viewing the Chinookan dialects as a whole, we find that the same general morphological characteristics apply to both Upper and Lower Chinook. In both groups we have the concept of the word as distinct from the sentence clearly developed.[1] Pronominal incorporation of subject, object, and indirect object in the verb; a somewhat elaborate apparatus of pronominal elements and pronouns (including the dual and an inclusive and exclusive in the first person dual and plural); a peculiar method of expressing the possessive pronouns (these are prefixed elements related to the pronoun subjects of transitive verbs); a characteristic use in many cases of invariable particles accompanied by auxiliary verbs instead of the use of verb-stems to express the main idea (as though one were to say in English: "He made the bell ding-dong" instead of "he rang the bell"); a general tendency toward onomatopoesis; the extraordinary phonetic weakness of many of the verb-stems (often consisting of but a consonant or cluster of consonants); local or adverbial prefixes and local and quasi-modal suffixes in the verb; and a thoroughly developed system of grammatical sex-gender (masculine, feminine, and neuter), both in the noun and in the verb — all of these features are shared by both the upper and the lower dialects.

The first important difference between the Wishram and Lower Chinook is found to be in the phonetic systems of the two. Whereas the lower dialects affect on the whole a surd articulation (with pre-

[1] Such a word, for instance, as the Wishram *gatctexcgám*, 'he took them away from the two (women)' (*ga-* = tense sign indicating remote past; *-tc-* = 3d sing. masc. subj. of trans. verb; *-t-* = 3d pl. obj. of undefined gender; *-c-* = 3d dual indirect object of undefined gender; *-x-* = reflexive element indicating that object, *-t-* is possessed by persons referred to by *-c-*, here most easily rendered by 'from'; *-cg-* = verb-stem or "root" meaning 'take'; *-am* = verbal suffix generally denoting 'arriving, coming or going to do something,' but not quite transparent in its application to this verb) must be conceived of as an indivisible unity in the same sense in which a Latin form like *cōnscrīpsī* is an organic unit (not merely *cōn* + *scrīb* + *s* + *ī* as agglutinated elements intelligible *per se*); none of the elements in the given verb-form has any sort of meaning outside of its particular place in such form. In other words, the word and sentence do not flow into one another in Chinookan.

dominance of *p*, *t*, and velar surd *q* over *b*, *d*, and velar sonant *g*), the Wishram is prevailingly sonant in its use of stops. Thus, where the Lower Chinook has ō'*p*a, 'yellow-jacket,' and an*t*ō'*t*ēna, 'I killed them,' the Wishram has wá*b*a and in*d*ú*d*ina. Moreover, the short *u* and *i* of Wishram are generally represented in Lower Chinook by long *ō* and *ē*, as seen in the latter example cited. The peculiar voiceless palatalized *l* (written ɬ) of the Pacific coast appears in Wishram without the characteristic stop quality of the Lower Chinook; thus we have Lower Chinook ɬōn 'three,' but Wishram łun. These phonetic differences, together with a number of local phonetic changes that it is not necessary to go into here,[1] would suffice to give the two groups of dialects a marked acoustic difference. From internal evidence I am very strongly inclined to believe that the phonetics of Wishram represents better than that of the lower dialects the original condition of Chinookan. Inasmuch as the phonetics of Lower Chinook is closely allied to that of the neighboring Coast Salish (such as the Tillamook and Chehalis), the interesting possibility presents itself that the Chinookan tribes were formerly all located east of the Coast range and that some of them, proceeding down the river in their well-built canoes, came to the Pacific coast and there assimilated the phonetic system of their new neighbors. This, however, is confessedly mere speculation, and needs confirmatory evidence.[2]

Leaving aside these phonetic differences, perhaps the most striking morphologic difference is in the treatment of the demonstrative pronouns. Both the upper and lower dialects possess different forms for the various relations of near the speaker, near the person

[1] Characteristic Coast features found in Lower Chinook but not in Wishram are besides: the presence of the voiceless palatal spirant *x*· as in German *ich* (Wishram employs instead a voiceless palatal spirant *x* pronounced far forward, yet quite distinct acoustically from *x*·, which to Wishram ears sounds like *c*); and the difficulty of distinguishing between *m* and *b* and also *n* and *d*, a characteristic Coast Salish phonetic feature.

[2] Such a movement of the Chinook down the river would satisfactorily explain also the severed position of the Salish Tillamook, in Oregon, who are separated from the linguistically related Chehalis only by Chinookan tribes. Even though all the Salish tribes be of interior provenience, as generally believed, their occupancy of the Pacific coast, including the region directly north and south of the Columbia, may have long antedated the coming to the coast of the Chinook. See A. B. Lewis, "Tribes of the Columbia Valley and the Coast of Washington and Oregon," *Memoirs of the American Anthropological Association*, 1906, I, pt. 2, p. 198.

addressed, and near the person spoken of, and both distinguish the three numbers and the three genders of the singular in the demonstrative. Whereas, however, the Lower Chinook further distinguishes between visibility and invisibility of the person or object, no such difference could be observed in the use of the demonstratives in Wishram. Moreover, the principle of formation of the demonstratives is, in detail, quite dissimilar in the two groups. In Lower Chinook the demonstrative is built up of three exceedingly weak phonetic elements: a consonant expressing visibility or invisibility, a vowel or consonant denoting the number and gender of the person or object referred to, and a consonant or two vowels defining the demonstrative relation. In Wishram the principle of formation is simpler; each demonstrative form is built up of two agglutinated syllables, one of which is the short form of a 3d pers. pronoun (defining both gender and number), and the other a characteristic element indicating the demonstrative relation. Speaking generally, the demonstratives in Wishram seem to stand in much closer relation to the personal pronouns than they do in the lower dialects.[1]

Reference was made above to the general tendency toward onomatopoesis in the Chinookan dialects. The impression which Professor Boas had obtained of such a character in his study of the lower dialects was in every way confirmed by my own study of the Wishram. The frequent rhetorical lengthening or shortening of vowels and consonants, the duplication or quintuplication of imitative elements, and the frequent use of onomatopoetic particles in

[1] For convenience of comparison the demonstratives of both Lower Chinook and Wishram are tabulated below. Those in parentheses are the Chinook correspondents of the Wishram forms immediately above:

	Masc.	Fem.	Neuter	Dual	Plural
Near 1st Person *hic*	*dâuya*	*dâua*	*dâuła*	*dâucda*	*dâuda*
	(*x·ik*)	(*x·ak*)	(*x·ɪLik*)	(*x·ɪctik*)	(*x·ɪtik*)
Near 2d Person *iste*	*yâxdau*	*âxdau*	*łâxdau*	*cdâxdau*	*dâxdau*
	(*x·iau*)	(*x·au*)	(*x·ɪLa*)	(*x·ɪcta*)	(*x·ɪta*)
Near 3d Person *ille*	*yâxia*	*âxia*	*łâxia*	*cdâxia*	*dâxia*
	(*x·ix·*)	(*x·aX*)	(*x·ôLa*)	(*x·ôcta*)	(*x·ôta*)
Shortened Pronouns in Wishram	*ya*(*x*)	*a*(*x*)	*ła*(*x*)	*cda*(*x*)	*da* (*x*)

The Lower Chinook forms here given are those implying visibility. The corresponding demonstratives used to refer to invisible objects are obtained by changing the initia *x·-* to *q-*.

lieu of verb-stems are not the only phenomena which illustrate this onomatopoetic tendency. Most characteristic of Wishram, and probably of the other Chinookan dialects also, is the employment of a series of changes in the manner and, to some extent, in the place of articulation of the various consonants, in order to express diminution and augmentation. This singular rhetorico-grammatical process works in such a way that all surd and sonant stopped consonants become exploded consonants (better known as "fortis") to express the diminutive idea (i. e. *b* and *p* become *p!*, *d* and *t* become *t!*, *g* and *k* become *k!*), while all surd and exploded consonants become sonant to express the augmentative (i. e. *p* and *p!* become *b*, *t* and *t!* become *d*, *k* and *k!* become *g*, *q* and *q!* become *g*); in the case of the velar consonants a possible change to the "fortis" to denote the diminutive is attended also by a more forward, i. e. palatal, articulation (i. e. *g* and *q* become, not *q!*, but *k!*). Moreover, the sibilant consonants *c*, *tc*, and *tc!* on the one hand, and *s*, *ts*, and *ts!* on the other, are related to each other as augmentative and diminutive consonants, while *dj* may sometimes, though rarely, be employed as the augmentative grade of *tc* and *ts* (e. g., *idjik-*) *djik* 'big wagon,' from *itsíktsik* 'wagon.' The guttural spirant *x* becomes *x* in the diminutive form. Subjoined are a few illustrations for the purpose of making the process more easily understood. The normal word in Wishram for 'hip-joints' is *ck!álkal*. The diminutive of this word is *sk!álkal*, in which, it will be noticed, the *c* of the first word has been changed to *s* in consonance with our rule. The word *sk!álkal* would be appropriately used to designate a baby's hip-joints, for instance. On the other hand the augmentative would require a change of the fortis *k!* to a sonant *g* — hence *cgálkal* is used to denote 'big hip-joints,' as of a giant. Similarly, while *aq!óxł* with velar fortis (*q!*) is the normal word for 'knee,' *ak!úxł* with palatal fortis (*k!*) and guttural spirant pronounced farther front (*x*) is the diminutive, and *agóxł* with sonant velar (*g*) the augmentative. Not infrequently there is a slight change of meaning accompanying the phonetic change. Thus, while *itcɬi'nôn* (masc.) denotes 'eagle,' *itsɬi'nôn* (neut.) with diminutive consonantism means 'bird'; *ik!álamat* denotes 'stone,' but *igálamat* with augmentative consonantism means 'rock.' It

must not be supposed that this characteristic consonant-gradation is confined to the noun; it is found just as well in every other part of speech. An example of its use in the verb will serve to give an idea of its rhetorical possibilities. *Inigɛ́ltcim* is the normal word for 'I struck him with it.' If the verb-stem *-tcim* appears, with diminutive consonantism, as *-tsim*, it implies that the person struck is small; if the verbal prefix *-gɛl-*, which implies in this case intent to hit, is pronounced *-k!ɛl-*, the implication is that the missile used is a small one. Hence we have four forms: *inigɛ́ltcim* 'I hit him with it,' *inigɛ́ltsim* 'I hit him (a child perhaps) with it,' *inik!ɛ́ltcim* 'I hit him with it (something small),' and *inik!ɛ́ltsim* 'I hit him (a child) with it (something small).' It would seem then necessary, so far as Chinookan grammar is concerned, to allow as a regular grammatical process, alongside of reduplication, vowel change or "ablaut," and pre-, in-, and suffixation, a fourth process — consonant-gradation or "ablaut."

Turning again to morphology, there was one feature which was well calculated to arouse a certain degree of surprise. The work which had been done on Lower Chinook disclosed a paucity of tenses that is, on the whole, quite in accordance with the general morphologic character of many American linguistic stocks. In Wishram, however, I found that it was necessary to distinguish carefully six tenses: 1st, a tense characterized by the prefix *ga-* (before consonants) or *gal-* (before vowels) in certain cases optionally by the prefixed consonant *n-*), which refers to time long past, say more than one year ago, and which is used regularly in the recital of myths; 2d, a tense characterized by the prefix *ni-* (before consonants) or *nig-* (before vowels), used to refer somewhat indefinitely to time past and which is used in speaking of events that happened say less than a year ago, yet more than a couple of days; 3d, a tense characterized by prefixed *na-* (before consonants) or *nal-* (before vowels) and suffixed *-a*, which seems to refer to recent time exclusive of to-day, more specifically to yesterday; 4th, a tense characterized by prefixed *i-* (before consonants) or *ig-* (before vowels), which refers to an action already performed to-day; 5th, a tense characterized normally by suffixed *-t*, referring to an action now going on but, as it seems, with the implication of its soon being

completed; and 6th, a future tense, normally characterized by prefixed *a-* (before consonants) or *al-* (before vowels) and suffixed *-a*.[1] Besides this series of six positively characterized tenses, I should not omit to mention that some verbs, when referring to present time, are morphologically tenseless, and seem to form their immediate past tense by a verbal prefix *-t-* which ordinarily denotes action toward the speaker.[2]

In this connection I may also mention a group of verb-forms which are characterized by the consonant *l* (assimilated in nasal surroundings to *n*) suffixed or infixed to the verb-stem, sometimes by *-lal* (or *-nan*) suffixed to the verb-stem. These forms denote frequentative or continuative action and, as a rule, do not allow the verb to be further characterized by a tense element. They may then, from a certain point of view, be considered as forming a seventh tense — the present tense with no implication of completion.[3] The most interesting point about these *l*-frequentatives is

[1] Examples —

TENSE:	*ga*-FORM	*ni*-FORM	*na*-FORM
	*ga*yúya 'he went' / *gal*úya 'she went'	*ni*yúya / *nig*úya	*na*yúya / *nal*úya
	*ga*tcigélkEl 'he saw him'	*ni*tcigítkEl	*na*tcigélgE*la*
	*gal*ixux 'he became'	*nig*ixatx	*nal*ixúxw*a*
	*ga*cgnúx 'they two did to me'	*ni*cgnátx	*na*cgnúxw*a*

	i-FORM	PRES. *t*-FORM	FUT. *a*-FORM
	*i*yúya / *i*ɬúya	yúi*t* / úi*t*	*a*yúya / *al*úya
	*i*tcigélkEl	(tssík!Elutk*t*) 'he looks at him'	*a*tcigélgE*la*
	*ig*ixux	———	*al*ixúxw*a*
	*i*cgnúx	cgnux*t*	*a*cgnúxw*a*

[2] Thus *úxt* (- *a* + *u* + *xt*) means 'she is seated,' but 'she was sitting' is rendered by *átxt*, in which the prefix *-u-* has been changed to *-t-*. Cf., for this interchange, *ɬúgwat* 'they fly (away from me)' and *ɬgat* 'they fly toward (me).'

[3] Such frequentative forms are :

WITH TENSE-SIGN	FREQUENTATIVE
*ga*tksánbna*t*x 'they jumped in the water'	tksánbna*nt*x 'they keep jumping in the water' (verb-stem *bna-*)

that certain verb-stems apparently infix the *l* or *n*. If our English word 'look,' e. g., were also a Wishram verb-stem, 'he looked at it' would be *itciúlook*, but 'he keeps looking at it' would probably be *tciúloolk*.[1] I pass over many other verbal peculiarities, such as the distributive suffix *-yu* (*alxk!wáya* 'we shall go home,' but *alxk!wáyuwa* 'we shall go each to his own home') or the passive suffix *-ix* (*itciúłxum* 'he ate it up,' but *yułxúmix* 'it is eaten up') to mention the considerable difficulty experienced in analyzing the noun, apart from its syntactic elements which are transparent enough.

The pronominal elements prefixed to the noun (every noun is either masculine singular, feminine singular, neuter singular, dual, or plural) are in Lower Chinook identical with the pronominal object elements incorporated into the transitive verb, except for the feminine singular, which in the noun shows *ð-* (from original *wa-*) as compared with *-a-* in the verb. In Wishram, however, the noun has prefixed a pronominal element differing from the corresponding element in the verb by an initial *w-* (masc. and fem.) or *i-* (neuter, dual, and plural). The following table shows the corresponding elements:

	Noun in Wishram	Noun in Chinook	Obj. in Wishram Verb
masc.	*wi-*, *i-*	*i-*	*-i-*
fem.	*wa-*, *a-*	*ð-*	*-a-*
neut.	*iɬ-*	*ʟ-*	*-ɬ-*
dual	*ic-*, (*is-*)	*c-*, (*s-*)	*-c-*, (*-s-*)
pl.	*id-*	*t-*	*-d-*

*ga*tssúbEna
'he jumped'
tssubEná*nan*
'he keeps jumping'

*ga*tccinq!wð'ɬgunaba
'he grasped him with his claws'
tccinq!wð'ɬk^{u}na*n*pɬ
'he scratches him'

*ga*kdúgwiptck
'she gathered driftwood'
kdúgwi!ptck
'she keeps gathering driftwood'

*ga*yúkwa
'he flew'
yugwà*lal*
'he flies about'

[1] Some examples of this phenomenon are:

With Tense-sign	Frequentative
*gaɬ*ixpcut	ixpcú*l*it
'he hid himself'	'he is hiding himself'
*ga*tcíuciɬ	tciuci*l*ɬ
'he used it'	'he keeps using it'
ksi'nk!itk*l*	ksínk!idE*l*k
'she looks at me'	'she keeps looking at me'

(verb-stem *tk-*

The choice between *wi- wa-* and *i- a-* in Wishram is dependent chiefly upon considerations of syllabic length: *wilx* 'land' (cf. Chinook *ilē'ē*), but *igánuk* 'beaver'; *wámal* 'marrow' (cf. Chinook *ð'mala*), but *agagílak* 'woman.'

It had been hoped that some light would be thrown on the derivative elements of the noun, but it cannot be claimed that all desirable success was attained in this direction. Perhaps the most transparent derivative elements that were found are the suffixes *-lit* and *-mat*. The former of these seems to denote a group, particularly a grove of trees. Thus the word *ilíbum* 'apple' (borrowed, of course, from the French *la pomme*) forms the derivative noun *ilíbumɛlit* 'orchard.' The suffix *-mat* is perhaps best defined as denoting 'something used for so and so.' For instance, *isqxús* denotes 'the eyes,' *isqxúsmat* means 'something for the eyes,' i. e. spectacles.[1] An interesting group of nouns is formed by descriptive verb phrases, such nouns being in effect pure verb forms. The loon, e. g., is described as 'he shouts along the river' (*tci-ilúmat wímaɬ*), and 'telescope' is rendered by 'people keep looking through it' (*qēxgélgɛlim*).

The most puzzling linguistic phenomenon found in Wishram, because it is at complete variance with what we have in the lower dialects, is the use of a certain number of loosely taggedon postpositions, in some cases optionally prepositions. We have a suffix *-ba* denoting 'in' or 'at,' a suffix *-iamt* meaning either 'towards,' or 'from,' a suffixed or prefixed element *báma* meaning 'for,' the post- or pre-positions *ámɛni* and *ɛ́nɛgi* meaning 'with' or 'made out of,' and an element *-bɛ́t*, meaning 'when,' suffixed to verb forms.[2] The

[1] Further examples of this suffix are: *igɬctxmat* 'load' (from verb-stem *-ctx* 'to carry on one's back'); *itk!iciłmat* 'tools' (verb-stem *-cił* 'to use'); *ak!ixwácamat* 'plane' (verb-stem *-xwac* 'to plane').

[2] The following examples illustrate the use of these elements with nouns, pronouns, and verbs:

ba: *wímaɬba* 'in the river; *dáuyaba wilX* 'in this country' (lit. 'this-in country'); *gatcigɛ́lkɛlba* 'where he saw him' (*gatcigɛ́lkɛl* 'he saw him').

iamt: *wímaɬiámt* 'to *or* from the river'; *imigáił naikáyamt* 'you are bigger than I' (lit. 'your bigness [is] me-from, compared with me'); *átpXiamd agáłax* 'to where she goes out towards [us] (*atpX* 'she goes out towards'), the sun,' i. e. 'east.'

báma: *cán bama* 'for whom?'; *Múlmul bama* 'from, belonging to Fort Simcoe.'

ámɛni: *igábɛnac amɛni* 'made out of young oak.'

ɛ́nɛgi(ngi): *aq!ɛ'wiqxi ngi* 'with a knife.'

bɛt: *gayúyabɛt* 'when he went'; *nk!áckacbɛt* 'when I was a child.' In lengthened form *bä't* it means 'as soon as': *gayuyabā't* 'as soon as he went.'

extent of pronominal incorporation of indirect objects and the use of local or relational prefixes in the verb are such in the Chinookan dialects that the employment of these local tags (one might be inclined to call them "cases," if they had less individuality) seems quite unnecessary. It is of considerable theoretic importance, therefore, to note that the neighboring Sahaptian dialects, quite similarly to the Klamath, make an extended use of such case-suffixes. We would then have here a good example of the *grammatic*, not merely lexical, influence that dialects of one linguistic stock may exert on geographically contiguous dialects of a fundamentally distinct stock.[1]

In conclusion a few words may be devoted to the mythology of the Upper Chinook. I have not as yet enough texts of myths to present a really complete description of the mythologic concepts and elements present in the tales of the Wishram, but some of the main points seem patent enough. As in other Indian mythologies it is believed that there was a time antedating the present one when animals walked about as men, though having approximately the same mental and, to a large extent, physical characteristics as now. At that time, when there were no Indians, properly speaking, in the country, but only anthropomorphic animals, many things were not as they should be, and, in order to make the country fit for habitation by the Indians destined to hold it, it was necessary for a culture-hero or transformer to rectify the weak points in creation. This transformer is, as in the plateau regions to the east, the Coyote. There is a cycle of myths made up of local tales telling how Coyote traveled all the way up the Columbia river, transforming monsters and instructing the people in the various arts of life. This string of local tales is, if I am not mistaken, continued in unbroken succession by the Sahaptian tribes living farther up the river, so that we have here a series of myths, belonging together yet distributed over a large number of different tribes. Some of the things that Coyote does are: to stock the Columbia with fish that had been withheld from the rest of the world by two women; to transform two women, who entice wayfarers, into birds; to provide the people of the

[1] Of the postpositive elements given above, three, *báma*, *ÉnEgi*, and *ámEni*, are certainly of Sahaptin origin, probably also *-ba* (cf. Yakima *-pa* 'in'). This explains their entire absence in Lower Chinook.

Cascades country with mouths that had formerly been lacking; to instruct men in the art of catching white salmon in basket traps and of spearing and steaming salmon; to put an end to the atrocities of the merman who swallows canoes with men and all, and of the dread woman, At!at!áłia, who steals children and roasts them on an island still pointed out at the Long Narrows; and so on. In all this Coyote is distinctly the benefactor of mankind, but at the same time he is, as often elsewhere, conceived of as cunning, deceitful, and gluttonous. In some stories, particularly in such as do not belong to the cycle of Coyote as Transformer, he is an insufferable marplot, as when he, contrary to Eagle's injunction, opens a box containing the souls of his and Eagle's wife and son, thus bringing death into the world. At the same time he is indescribably obscene; some of the deeds of this kind performed by the culture-hero of the Tillamook, as communicated by Professor Boas, are also told by the Wishram of him. Although Coyote is the main transformer, I think it would be incorrect to speak of him as the hero of the Wishram. This point comes out clearly when Coyote himself, in one of the transformation myths, admits that he is no chief, that title being reserved, among the animals, for the Eagle and the Salmon. These two may, indeed, be considered the true heroes of Wishram myth, their deeds being narrated with considerable sympathy and admiration. The Salmon, in particular, may be described as the local hero of the Chinookan tribes, an elaborate salmon myth being common to both the Lower Chinook and the Wishram. I cannot say definitely whether Bluejay, who figures so prominently as buffoon among the coast tribes, such as the Kathlamet and Quinaiult, occupies a corresponding position among the Wishram. So far as the material collected is concerned, he is quite a subordinate character, and I suspect that he is almost entirely superseded by Coyote. The mischievous and spiteful elements of his character, as of the Mink of more westerly and northerly regions, are embodied also in the Weasel.

Besides the main type of myth — i. e. the Transformer or Culture-hero myth, one can discern also a species of nature myth that is somewhat different in character. This type is represented, e. g., by the tale of the contest between the East Wind and the West

Wind, in which the latter proves successful. Another example of this type is the struggle of the five East Wind brothers with the five Thunder brothers, resulting in the death of all but one of the latter, which exception accounts for the existence of a certain amount of thunder to-day.

The single myth motives of Wishram mythology are many, probably most of them, found distributed over considerable areas elsewhere. Such well-known incidents as the magic increase of a small amount of food, the blundering imitation of the host, the life and death contest at gambling bones, the unsuccessful attempt to destroy strangers in an overheated sweat-house, the abandonment and later enrichment of a poor boy while his maltreaters are starving — all these and many others are common property of the Northwest Pacific coast and regions to the east and south, though the setting in which they occur may vary indefinitely. On the whole, the chief interest of Wishram mythology seems to lie in its transitional character between the mythologies of the coast and of the plateau. Although it shares, as we have seen, a local and specifically Chinookan salmon myth with the Lower Chinook, many of the myth motives are not duplicated farther down the river, but are found in other regions, such as the plateaus. Here again we observe that linguistic and cultural, more specifically mythologic, distribution areas are by no means necessarily congruent.

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THE EARLY HISTORY AND THE NAMES OF THE ARAPAHO

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The Cheyenne and the Arapaho are the westernmost representatives of the Algonquian linguistic family, which occupied a large part of northern North America from the Atlantic ocean to the Rocky mountains.

Captain W. P. Clark, Second cavalry, U. S. A., in his able work on *Indian Sign Language* (p. 39), makes the statement that "very reliable tradition locates this tribe in western Minnesota several hundred years ago, meeting the Cheyennes as they (the Cheyennes) came out on the prairie, and for many years moving and camping with or near them, so that for all practical purposes they were one people, and the history of one relates very closely to the history of the other." While this is probably true, diligent research has not yet brought to light any tradition that definitely places the Arapaho in a territory farther east than the Missouri river; and in the scant early references to the Cheyenne east of that stream, I have been able to find no mention whatever of the Arapaho.

There are at present three known main divisions of the Arapaho tribe, viz, the Northern, the Southern, and the Atsina or Gros Ventres of the Prairie — often called in earlier times Les Gros Ventres de Fort des Prairies, after the fort of that name on the Saskatchewan. These latter were formerly sometimes confounded with the Blackfeet, with whom they were wont to roam; and also with the Gros Ventres of the Missouri, or Hidatsa, who belong to the Siouan linguistic family.

Since 1874 the Northern Arapaho have lived with the Shoshoni near Fort Washakie, Wyoming; the Southern Arapaho with the Southern Cheyenne on the Canadian river and its branches in Oklahoma; the Gros Ventres of the Prairies near the Assiniboin on Milk river, Montana. Each division has its individual name in the sign language of the plains.

Probably the first white men to see the Arapaho were those who accompanied the expedition of La Verendrye in 1742–43. These also first saw the Black hills and Badlands of Dakota, and the northern Rocky mountains. A number of tribes are mentioned in La Verendrye's report[1] as being near the Black hills and the Rocky mountains at that time, but only five of these can now be recognized with any degree of probability. These are as follows:

1. *Gens de la Flèche collée ou Sioux des Prairies*, the mention of whom disposes of the assertion, made by some writers, that the Sioux did not reach the Black hills until 1775–76.

2. The *Mantanes*, or Mandans of Dakota.

3. *Gens des Chevaux*, referring probably to the Cheyenne, the identification of whom will be treated at a future time.

4. *Les Beaux Hommes*, probably Crows, or Absáruka, who are said to have been a very handsome people. Catlin[2] especially was impressed by their fine appearance: "A Crow is known wherever he is met by his beautiful white dress, and his tall and elegant figure; the greater part of the men being six feet. . . . The Crows are very handsome and gentlemanly Indians. . . . I have just been painting a number of the Crows, fine-looking and noble gentlemen. They are really as handsome and well-formed set of men as can be seen in any part of the world. There is a sort of ease and grace added to their dignity of manners, which gives them the air of gentlemen at once."

5. *Les Gens du Serpent*, readily recognizable as the Shoshoni or Snake Indians.

In addition to these tribes, La Verendrye mentions the Gens de l'Arc, the Gens de la petite Cerise, and Les Pioya, none of whom I can now identify; but as it is well known by their common traditions that the Kiowa, Kiowa Apache, and Arapaho were in this northern territory in the middle of the eighteenth century, it is not improbable that these tribes may have been comprehended in the list.

The Arapaho have been known by many different names, usually given in their own language by interpreters from other tribes.

[1] Margry, *Découvertes*, VI, 598, 1886.

[2] *North American Indians*, I, 46, 49, London, 1841.

The French name, Gros Ventres, is first mentioned in the report of Legardeur de Saint Pierre, who wrote as follows from Fort de la Reine, on Assiniboine river, in 1751 :[1]

"Mais mes forces me l'eussent-elles permis, la guerre que toutes ces nations avoient contre les Iactchejlini, les Brochets et Gros-Ventres, auroit été un obstacle insurmontable."

This indicates that the Gros Ventres were in the Blackfoot country in 1751, and contradicts the statement in *Blackfoot Lodge Tales* (p. 224) that they reached that country early in the nineteenth century.

In 1789 this band again appears under the name "Fall Indians," the translation of their Cree designation, because they lived near the falls of the Saskatchewan. Mackenzie[2] says :

"Next to them [the Blackfeet], and who extend to the confluence of the South and North branch [of the Saskatchewan], are the Fall, or Big-bellied Indians, who may amount to about 600 warriors. . . . The Fall, or Big-bellied Indians, are from the South-Eastward also, and of a people who inhabit the plains from the North bend of the last mentioned river [Missisoury], latitude 47.32. North, longitude 101.25. West, to the South bend of the Assiniboin River, to the number of seven hundred men. Some of them occasionally come to the latter river to exchange dressed buffalo robes and bad wolf-skins for articles of no great value."

This information, coupled with the fact that the Gros Ventres of the Prairie and the Arapaho belong to the Algonquian family, constitutes the only record, so far as is known to me, that the Arapaho have come from the direction of Minnesota.

Edward Umfreville[3] says :

"This [Fall] nation is thus named by us, and by the Nethethawa [Cree] Indians, from their inhabiting a country on the Southern branch of the river [Saskatchewan], where the rapids are frequent. As they are not very numerous, and have a harsh, guttural language peculiar to themselves, I am induced to think they are a tribe that has detached itself from some distant nation, with which we are not as yet acquainted.

"This is another instance of the impropriety of the appellation bestowed upon these Indians by the Canadian French, who call them Gros

[1] Margry, op. cit., VI, p. 640.

[2] *Voyages from Montreal to the Frozen and Pacific Oceans in the Years 1789 and 1793*, pp. lxx, lxxi, London, 1801.

[3] *Present State of Hudson's Bay*, p. 197, 1790.

Ventres or 'Big Bellies,' whereas, rather than being remarkable for their corpulency, they are as comely and well proportioned as any Indians.

"Though we have interpreters for all the other languages, none has yet gained a sufficient knowledge of the Gros Ventres tongue to make themselves understood, the general medium of conversation with them being the Blackfoot language, which is agreeable and readily acquired."

The same linguistic difficulty has been observed wherever the Arapaho have been met. It first came to my notice in 1877, at the mouth of the Marias; again at Fort Belknap on Milk river, and later among the Southern Arapaho, where the services of the veteran Cheyenne interpreter, Ben Clark, were generally brought into requisition because most of the Arapaho understood Cheyenne while many of their oldest men spoke Comanche as well.

Captain W. P. Clark, in 1880, speaking of the Arapaho language, said that "it is almost an impossibility for a white man to learn to speak it. . . . At neither of the three agencies during the past season was there an interpreter." I believe, however, that it is possible, though difficult, for a white man to learn Arapaho if he be willing to expend the labor in acquiring it, although it shares with the Kiowa the reputation of being the most difficult language between the Missouri and the Rockies.

Lewis and Clark,[1] in 1806, call them Paunch Indians and Gens de Panse as well as Fall Indians.

Alexander Henry, the younger,[2] in 1808, confirmed Umfreville and Mackenzie, saying:

"The Big Bellies, or Rapid Indians, are now stationed south of the Slaves,[3] between the South Branch [of the Saskatchewan] and the Missourie. Formerly they inhabited the point of land between the North and South branches of the Saskatchewan to the junction of those two streams; from which circumstance, it is supposed, they derived the name of Rapid Indians. They are of the same nation as the Big Bellies of the Missourie, whom I have already mentioned.[4] Their dress, customs, and manners appear to me to be the same. Formerly they were very numerous, and much dreaded by the neighboring nations. But since the smallpox

[1] Statistical Review, in *American State Papers, Indian Affairs*, I, p. 717, 1832.

[2] *Henry-Thompson Journals*, Coues ed., p. 530.

[3] The term Slaves is applied by Henry to the Blackfeet. See pp. 523 and 533 of his journal.

[4] This, however, is a mistake, since the latter are the Hidatsa, a Siouan tribe.

their numbers have diminished very much, through the effects of that baneful disease, and in consequence of depredations committed upon them by tribes with whom they have been at variance. The Slaves [Blackfeet] have fought many bloody battles with them, though they are now on amicable terms.[1] They are a more industrious people, and commonly bring us a good trade in . . . grizzly bear and buffalo robes. In dressing these robes they are far superior to the Slaves and fully equal to the Mandanes."

Lewis and Clark[2] call them "Kanenavish" or "Gens des Vaches," and place them "on heads of the Paducas fork of the river Platte, and south fork of Cheyenne river."[3] They also say these nations all live to the southwest by south to the west of the Rickeries; all speak different languages, all follow the buffalo, and winter near the mountains. Henry[4] says the "Schians and Sioux — for the camp was composed of both of these nations, and a few Buffalo Indians" — meaning Arapaho. This camp was to the east of the Black hills of Dakota in 1806. He further identifies (p. 384) the Kaninavish with the Buffalo Indians, or Arapahos, as follows:

"Near the sources of these two rivers [one the Platte] they [the Cheyennes] make their annual hunts of bear and beaver in company with the Buffalo Indians or as some call them Caneninavish tribe inhabiting that part of the country they consist of about 500 tents."

H. M. Brackenridge,[5] in his table of the Indian nations of Louisiana, mentions the "Kan-ne-na-wish, — 1,500 warriors, 5,000 souls, a wandering people, on the heads of the Yellow Stone river." Also (p. 86) "Paunch Indians, 800 warriors, 2,500 souls, northeast of the Missouri near the head, trade with the British," but inimical to Americans; and the "Gros Ventres of the Prairie," northeast of the Missouri.

[1] This is somewhat at variance with the statement in *Blackfoot Lodge Tales* (p. 244), derived from Clark, to the effect that they were at peace with the Blackfeet until 1862.

[2] *Am. State Papers*, op. cit., p. 716.

[3] The Thwaites edition of Lewis and Clark (vol. 1, p. 190, 1904) has "Kun.na-nar-Wesh — (Gens des Vach) Blue beeds." Note by editor on the same page: ". . . Meaning 'cow-people' — that is, Buffalo tribe. The Indian name here given — written by Biddle (1, p. 34) Kaninaviesch — is only a Chippewa appellation of that tribe, now known as the Arapaho, . . . (See Mooney's sketch of this people, in *U. S. Bur. Ethnol. Rep.*, 1892-93, pp. 953-957)."

[4] Op. cit., p. 377.

[5] *Views of Louisiana*, p. 85, 1814.

Captain W. P. Clark (p. 40) and others say that the Northern and Southern Arapaho separated about 1868. The following quotations, however, will show that they and the Northern and Southern Cheyenne had separated as far back at least as 1816:

"The Shiennes associated with these wandering tribes, are a small band of seceders, from the nation of the same name, residing upon the Shienne river. They are said to be daring and ferocious. They are, however, kept under restraint by the energy and firmness of their chief. The *Bear's Tooth*, who is the principal chief of the Arapahoes, and the head chief of all these nations, possesses great influence over the whole." The Arapaho, Cheyenne, and others "formerly carried on a limited trade with the Spaniards of Mexico, with whom they exchanged dressed bison skins for blankets, wheat flower, maize, etc., but their supplies of these articles are now cut off, by a war which they are at present waging against that people. They also, at distant periods, held a kind of *fair*, on the tributary of the Platte [whence the name Grand Camp creek], near the mountains, at which they obtained British merchandise from the Shiennes of Shienne river, who obtained the same at the Mandan village, from the British traders that frequent that part of our territory. Last winter, they traded a great number of horses and mules, with a party of white men, who had ascended the Red river. . . . The Kiawas, Arrapahoes, and Kaskaias or Bad-hearts, had been assembled together, with forty-five French hunters in the employ of Mr. Choteau and Mr. Demun of St. Louis. They had assembled for the purpose of holding a trading council with a band of Shiennes. These last had been recently supplied with goods by the British traders on the Missouri, and had come to exchange them with the former for horses. The Kiawas, Arrapahoes, etc., who wander in the extensive plains of the Arkansas and Red river, have always great numbers of horses, which they rear with much less difficulty than the Shiennes, whose country is cold and barren."[1]

This also shows the Cheyenne to have been intermediaries between the British traders in the north through the Mandan, as well as the Indians of the southern plains, for horses in 1816.[2]

Fowler, writing in 1821,[3] says:

"It is but Justice to Say we find the Kiawa the best Indeans possing more firmness and manly deportment than the arrapoho and less arogance

[1] Long, *Expedition to the Rocky Mountains*, I, p. 502; II, p. 367, Phila., 1823.

[2] See also *Henry-Thompson Journals*, Coues ed.

[3] *Journal of Jacob Fowler*, Coues ed., 68, 1898.

and Hatey Pride than the Ietan — we Ware Invited this day to Eat With one of the arrapoho Cheefs He Seet before us a dish of fat meat of Which We Eat plentyfully We Ware then asked if We new what kind of meat We Ware Eating We told him We did not He then Said it Wa[s] a dog telling us it [was] a great feest With the Indeans — and that He Invited us for that purpose."

The Comanche call the Arapaho *Sariet-tethka*, i. e. 'dog eaters,' a term of reproach. The Shoshoni have the same name for them.

Morse[1] thus speaks of the Southern Arapaho:

"Their number is estimated at 10,000. Their country extends from the head waters of the Kansas, south to the Rio del Norte. They are a warlike people, and often make predatory and murderous excursions on their eastern and northern neighbors."

After Morse's time very little notice seems to have been taken of them.

R. Graham,[2] Indian agent in 1824, testified as follows:

"The Arrepahas, who inhabit the country south of the Yellow Stone, and who are also erratic, and depend entirely upon the chase, are a tribe of the Blackfoot[3] Indians; making the range of these Indians along the base of the Rocky Mountains, from the Rio del Norte to the Saska-tchewine."

Fowler in 1822 and Farnham in 1839 mention them as being near the Arkansas. Prince Maximilian of Wied (1834)[4] follows Mackenzie, and adds:

"They are well made, little differing in appearance from the Piekanns, and other Blackfeet. . . . Well informed persons affirm, that they have at present not more than 200 tents; and from 400 to 500 warriors. . . . The Buffalo skins, dressed by them, are said to be now better than those of most of the other Indians. In the main, their customs agree with those of the Blackfeet, and they dispose of their dead in the same manner. They are reputed to be brave in war. Their language is the most difficult of all those of the Missouri and the Rocky Mountains. The Fur Company had not a single interpreter for this language, though great pains had been taken to procure one."

[1] *Report to the Secretary of War*, 1822, p. 253.

[2] *American State Papers, Indian Affairs*, II, p. 451, 1834.

[3] Gros Ventres of the Prairie are here confounded with the Blackfeet, with whom they only roamed.

[4] *Travels in North America*, 1843, p. 234.

In describing a visit from the Gros Ventres des Prairies, when they came in great numbers to barter skins for brandy and ammunition, Maximilian says:

"Our situation was everything but agreeable, for these same Indians had entirely demolished a fort, on the frontiers of Canada, two years before, killed a clerk, and eighteen other persons, besides murdering several other white people in those parts; they had, in addition to this, had a quarrel with Lewis and Clark."

Albert Gallatin[1] has some account of them, as has Father de Smet, the noted missionary.[2] The latter says:

"The Gros-Ventres of the plains appear to me to have the advantage over the others [Blackfeet], in being more adroit, more docile, and courageous; but they are more strongly attached to their old superstitions, and are terrible *demanders*, as the Canadian employees here call shameless beggars. . . . [p. 256:] They are improperly ranked among the Black-Feet: besides they did not originate in the country, they do not speak their language, and are different in many respects. . . . The Gros-Ventres of the plains are a branch of the Rapahoes, who roam over the plains of New Mexico, and those on the Platte and Nebraska rivers. They separated from the nation a century and a half ago, on account of differences between their chiefs. The Gros-Ventres gave me this information."

Dr F. V. Hayden[3] says:

"I have searched all the works within my reach, and cannot ascertain with certainty their track of migration. . . . At the present time [1862] the Arapohos are divided into two portions or bands. The first portion call themselves na-ka-si'-nin, 'People of the Sage,' and number one hundred and eighty lodges. They wander about the sources of the South Platte and the region of Pike's Peak, also northward to the Red Buttes on the North Platte. Sometimes they extend their journeyings in search of buffalo along the foot of the Big-horn Mountains. . . . They spent a large portion of the winter of 1859 and '60 on the branches of Powder River, near the base of the Big-horn Mountains. The second band call themselves na-wuth'-i-ni-han, the meaning of which is obscure. It implies a mixture of different kinds of people of different bands. They number two hundred lodges, and range along the Arkansas River and its tributaries. . . . It would seem from 'Long's Expedition to the

[1] *Archæologia Americana*, II, p. 132, 1836.

[2] *Western Missions*, p. 254, 1863.

[3] *Ethnography and Philology of the Missouri Valley*, p. 321, 1862.

Rocky Mountains,' that the Arapohos occupied nearly their present district in 1819 and '20."

The same writer (p. 340) calls the Gros Ventres of the Prairie "Atsinas"[1] and seems to think they separated from the Arapaho in the Platte country, but this is contrary to their traditions. He continues (pp. 340–41):

"When this division took place is not now correctly known, though we think it must have occurred some time within the last century. . . . For the last hundred years or more they have lived on the Saskatchewan and near the sources of the Missouri. With the Blackfeet they have always been on terms of peace. . . . Their language is regarded by the traders and Indians as the most difficult to learn of any on the Upper Missouri. No trader has ever acquired it sufficiently to carry on even an ordinary conversation. . . .

"In the year 1818, the Atsinas, having surprised and robbed one of the forts of the Hudson's Bay Company, on a tributary of the Saskatchewan, fled to the sources of the Missouri, where they passed the winter; but, finding no traders there to furnish them with supplies or purchase their peltries, they continued their route across the mountains, and joined once more their old relations the Arapohos. Here they resided and hunted in common with the latter tribe for the space of five years, during which time the small-pox passed among them, having been communicated through other tribes with whom they were at peace or carried on a traffic. This disease, at that time, destroyed about half their number, but secured the remainder from the next attack, which occurred in 1838. At this latter period the small-pox only acted upon the young, and destroyed numbers of them, but the chiefs and elderly men escaped, so that the tribe was not reduced to the disorderly and helpless condition of the Blackfeet and other surrounding nations."

Hayden continues to narrate that in the summer of 1823, the Atsina becoming dissatisfied with the country of the Arapaho, and longing for some place where the buffalo were to be found in greater numbers, returned to the Blackfeet. On their northward march they fought two battles, one with a large party of trappers under the command of Sublette and Fontinelle; the other with the Crow nation. In the former, while they maintained their position, their losses were severe. In the latter they were taken by surprise and

[1] The Blackfoot name, meaning 'gut.' — Grinnell, *Blackfoot Lodge Tales*, p. 244.

completely routed. In the two engagements they lost about 125 warriors, besides a large number of women and children who were taken prisoners by the Crows.

During the winter of 1859–60, Hayden, with Raynolds, remained at Deer creek, near Laramie, Wyoming. Here he met Friday, an educated Arapaho, from whom he obtained his Arapaho vocabulary, and of whom he speaks (p. 322) as follows:

"The early history of this man, as given by himself, cannot be devoid of interest. . . . He says, that at the time of the separation of the Atsinas from the Arapohos, they were all encamped together on the Cimarron.[1] The Mexicans usually came up from the south to trade with them. At this time thirty of the Mexicans came, and the chief of the Atsina band wished them all to remain at his camp. The chief of the Arapoho band said, 'Let half of the traders go to one camp and half to the other.' A contest of words grew out of this, and finally the Atsina chief stabbed the Arapaho chief, and killed him. The brothers and sons of the murdered man immediately killed the first chief, and a battle commenced, but the difficulty was settled before a great number were slain. The two bands then agreed to separate, one portion ranging along the South Platte and Arkansas Rivers, the other passed through the North Park to Bridger's Pass, thence along the mountains to the Three Tetons. There they fell in with the mountain trappers, with whom they had a contest, and were driven toward the Yellowstone,[2] where they were again attacked by the Crows, a large number killed, and many taken prisoners. The remainder escaped to the Blackfeet."

It will be seen that these accounts harmonize to a great extent. Captain Clark[3] evidently refers to the same occurrence and says that Little Raven of the Arapaho informed him that the return to the north was made because the Kiowa and Comanche joined against them in war.

It was at the time of the separation that Friday was lost. After wandering about in the mountains for several days, he was found by Fitzpatrick, a noted fur trader and formerly United States agent for the Arapaho. Friday was educated in St Louis, and died, it is thought, near Fort Washakie, Wyoming.

[1] That was when they separated after their five years' stay with the Arapaho.

[2] Compare *Autobiography of James P. Beckwourth*, p. 128, for an account of this fight in 1823.

Sign Language, p. 198.

Captain W. F. Raynolds[1] says:

"We are now on waters flowing to the westward and into a branch of Lewis Fork [Snake river] which Bridger says is known to the trappers as Gros Ventres Fork, the Gros Ventres Indians being commonly in the habit of passing by this valley in their annual trips across the mountains; there is here also a Gros Ventre Pass."

Hayden[2] says the Arapaho call the Atsina *To-i-nin'-a*, "people who beg." Compare Father de Smet, above cited, and Mooney[3] who has *Hitu'nĕna*, "beggars," and who says further that the sign for "big belly" also means "beggars," but it is not explained how this can be, and I, for one, fail to understand this interpretation. Chief Joseph of the Nez Percés, in 1903, gave me the Nez Percé name for the Gros Ventres, which means "belly people."

As to the sign for Gros Ventres, it will be noted that they are called "belly" or "gut" people by many tribes, and it is highly probable that this name was received before they obtained horses, at which time they were more stationary than they subsequently were; that they resided on the Belly river, and this gave them their name (although it is just as possible that the river obtained its name from them); that they afterward moved to the falls of the Saskatchewan and were named Fall Indians by the Cree, probably at the time of the arrival of the Cree in that country. They were called "Gros Ventres" by the French and "Fall Indians" by the English. The sign might mean "belly people" or "big belly people" according to whether it was made with emphasis or not.

In speaking of the Arapaho, W. P. Clark (p. 43) says:

"I have been unable to ascertain why these Indians are called 'Arapahoes.' They can give no reason for it, and I have been unable to find a similar word in any of the languages of the surrounding tribes."

Mooney,[4] following Dunbar, derives the term from the Pawnee word "*tirapihu*, or *larapihu*, 'he buys or trades.' . . . It is not the name by which they are called by the Cheyenne, Sioux, Shoshoni, Kiowa, Comanche, Apache, Caddo, or Wichita." He also gives (p. 953) "*Ärăpăkata*—Crow name, from the word Arapaho."

[1] *Report*, p. 88, 1860.

[2] Op. cit., p. 326.

[3] *Fourteenth Report Bureau of American Ethnology*, 1892–'93, p. 1013.

[4] Op. cit., p. 1013.

Clark (p. 38) describes the sign for the Northern Arapaho as follows:

"Bring the right hand, back outwards, in front of center of breast, few inches from it, compress the hand and partially curve the fingers, so that tips of fingers and tip of the thumb shall be near together, tap or strike gently the breast with the tips of the thumb and fingers, repeating the motion."

This is correct, except the right breast as well as the center is tapped. Clark confuses this sign with that for "parent," or "mother," and deduces from this that the Northern Arapaho are the parent band, in which he is followed by Mooney (p. 954). This has also been told me by some of the Southern Arapaho, but from this view I am compelled to dissent, for the reason that the sign for "Arapaho" is made by tapping or driving something into the breast instead of imitating the drawing of sustenance out of the breast as in the "mother" sign. As will later be seen, it means something quite different.

The word "Arapaho" is foreign to the Arapaho tongue, which contains no *r*. The people of that tribe therefore cannot pronounce it correctly, invariably saying "N'appaho" which they believe to be the white man's name for their tribe. In searching out the meaning of obscure signs it has been my custom to compare the cognate words in the various spoken languages, sometimes with good results, oftentimes with none. All the languages of the plains have their dominant characteristics by which the listener can distinguish them even if in the next room, although he may not know a single word of any of them. The Cheyenne is low and full of the hissing sound, as *Omissis*, their name for the Northern Cheyenne. The Teton dialect of Dakota is liquid, from its many *l*'s, as *Oglala*, the name of Red Cloud's band at Pine Ridge. Obviously, then, the word "Arapaho," if an Indian word, must belong to one of the languages possessing the *r* sound, as in the Pawnee word *durahay*, "good"; or in the name of the Crow chief *Arapooish* mentioned by Bonneville. But inquiry among the Pawnee respecting its origin failed of result. Major S. G. Reynolds, then at the Crow agency, Montana, informed me in 1902 that "'Arapahoe' is originally a Crow word and means 'lots of tattoes.' It is pronounced *Ā-rā-pā-hòc* and it applies to the Indian tribe known by that name."

The following from Long (1819)[1] shows the prevalence of the Crow language on the plains at that time:

"On the morning of the 14th, we left our encampment, opposite the village of the Pawnee Loups, and proceeded on our journey, taking the most direct course towards the Platte. Our party had here received an addition of two men, one named Bijeau, engaged as guide and interpreter. . . . Both were Frenchmen, residing permanently among the Pawnees, and had been repeatedly on the head waters of the Platte and Arkansa. . . . Bijeau was partially acquainted with several Indian languages; in particular, that of the Crow nation, *which is extensively understood by the western tribes*, and, by frequent intercourse with the savages he had gained a complete knowledge of the language of signs, universally current among them."

Long's statement would supply a reason for the adoption of a Crow name for this tribe by the whites.

White Calf, chief of the Blackfeet, and Mountain Chief, of the Piegan, told the writer in the sign language that their spoken name for the Arapaho meant "tattooed-on-the-breast people," and described the process of tattooing, which was done in early times by means of several long cactus spines tied together; with this implement they pricked, by tapping, the spot they wished to tattoo until it was raw. Powdered charcoal was then rubbed in the wound, which, when thoroughly healed, left an indelible sky-blue mark. Garrard,[2] speaking of these punctures, says: "The Arapahoes (an adjoining tribe, with whom the Cheyennes intermarry) have three equidistant punctures on the breast."

The writer, in 1877, learned the Dakota name for the Arapaho—*Makpey-a-tó*, which means "cloud blue," or "sky blue," probably in allusion to the blue color of the tattoo marks on the breast of the Arapaho men. The Cheyenne name for Arapaho has the same meaning.[3]

In 1897, Left Hand, chief of the Southern Arapaho, spoke to me in signs as follows:

[1] *Expedition from Pittsburgh to the Rocky Mountains*, I, p. 450, Phila., 1823.

[2] *Wah-to-yah and the Taos Trail*, p. 105, Cincinnati, 1850.

[3] Since determining these facts it has been found that Hayden (p. 402) gives "*a-ra'-po-ho* or *-hose*" as the Crow name for the Arapaho, and Long (No. 62 in his list of signs, p. 386) has "*Arrapaho nation* — The fingers of one hand touch the breast in different parts, to indicate the tattooing of that part in points."

"The Southern Cheyenne believe that the opossum is another dea man. We call [in signs] the opossum 'shave tail.' We call [in signs] the crane 'tall bird': we have heard that it carries another bird on it back,[1] but we have never seen it."

From the above it will be seen that "Arapaho" is a Crow wor signifying "tattooed-on-the-breast people"; that the sign for th Northern Arapaho does not mean "parent" or "mother" band but has the same meaning as the word Arapaho itself; that it wa the Gros Ventres of the Prairie and not the Blackfeet with whom Captain Lewis had trouble in 1806; that the first mention in history of the name Gros Ventres was in 1751; that this tribe migrate from the north in 1818 and lived on the southern plains with th Arapaho until 1823, when they returned to the Blackfeet in th north; that the Northern and Southern Arapaho as well as th Northern and Southern Cheyenne separated at least as earl as 1816, and probably earlier; and that the Comanche name fo the Arapaho, *Sariet-tetlika*, "dog-eater," as well as the Shoshon name, having the same meaning, are terms of reproach from tribe which do not eat dogs.

[1] This belief is prevalent also among the Kiowa and Comanche.

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ALBERT SAMUEL GATSCHET, ÆT. 61.

ALBERT SAMUEL GATSCHET — 1832–1907

Albert Samuel Gatschet, philologist and ethnologist, son of the Reverend Karl Albert Gatschet and Mary Ziegler, was born in Saint Beatenberg, Switzerland, October 3, 1832, and died at his home in Washington, D. C., March 16, 1907.

The mother dying when he was about ten years old, the boy came under the care of his elder sister, Louise, for whom to the day of his death he cherished always the most tender affection. This childhood bereavement, which was accentuated by the austere disposition of his father, by throwing the child upon his own lonely resources, left a deep impress upon his after life. After some years at the lyceums of Neuchatel and Bern, where already he displayed a marked linguistic aptitude, he entered the University of Bern in 1852, spending six years here and later at the University of Berlin, with special attention to languages, history, art, and theology, his favorite studies being the Greek language and doctrinal criticism. At one time it was even his intention to enter the ministry, but the linguistic bent overmastered this desire, and later in life he ceased to regard spiritual things. The great Humboldt was then in Berlin, still writing books in his ninetieth year, and the inspiration of his wonderful career was not lost upon young Gatschet who patterned after him in depth and range of knowledge.

On completing his course at the university he returned to his native city, where he became a contributor to various scientific and literary journals. In 1867 he published his first large work, *Ortsetymologische Forschungen*, a philologic study of Swiss place-names in their Keltic, Latin, German, French, and even Arabic origins. It is still the standard authority. He soon after spent a study season in the museums of Paris and London. In January, 1868, he emigrated to America and took up his residence in New York city, where for some years he continued as a teacher of languages and an industrious contributor on scientific subjects to both foreign and domestic journals, writing with equal fluency in French and German, as well as, with less ease, in English.

Up to this period, with the exception of some indeterminate work of Schoolcraft and others, very little scholarly study of the native American languages had been made since the time of Gallatin, himself also of Swiss birth. In 1872 Dr Oscar Loew, a German botanist and student of languages attached to the Geographical Survey West of the 100th Meridian under Lieutenant Wheeler, brought back from southwestern United States sixteen Indian vocabularies, which he placed for examination in the hands of Dr Gatschet, to whom they proved of intense interest as opening up an entirely new field of linguistic research. The important results of his comparative studies of these vocabularies appeared in the annual reports of the Wheeler Survey for 1875 and 1876, and also in a German paper under the title of *Zwölf Sprachen aus dem Südwesten Nordamerikas*, published at Weimar in the latter year. In this way he came to the notice of Major J. W. Powell, then in charge of the Geographical and Geological Survey of the Rocky Mountain Region, by whom he was tendered a position as ethnologist, which he accepted in March, 1877, removing to Washington, where he thenceforth resided until his death, except when absent in the field. His first work in this capacity was the arrangement and classification for future study of the large collection of Indian linguistics then in possession of the Smithsonian Institution. Later in the same year he visited a number of problematic tribes in California and Oregon, making a beginning of the Klamath studies which afterward expanded into a great monograph.

On the organization of the Bureau of American Ethnology under Major Powell in 1879, Dr Gatschet became an original member, continuing with it until his retirement in 1905.

The earlier years of his Bureau connection were spent chiefly in active field service, with intervals of office work occupied in elaborating the results. In 1881 he brought to a close an exhaustive study of the linguistic material recorded by Father Pareja from the Timucua tribes of northern Florida in 1612–14, and established the fact that the Indians of the Florida missions of the St John region, long since extinct, constituted a distinct linguistic stock. In the same year he visited the remnant of the famous Catawba in South Carolina, and obtained a large body of material, by a comparison of

which he demonstrated that these people and the allied tribes were a part of the great Siouan stock of the western plains and in all probability the parent branch. Hale had already shown such a relationship for the Tutelo of Virginia in 1870, and Gatschet finally clinched the proposition by resurrecting the language of the Biloxi of southern Mississippi in 1886.

In the winter of 1881–82 he visited the remnant tribes of Louisiana, for some of which his work forms the sole basis of linguistic classification. In the winter of 1884–85 he visited a number of tribes in Oklahoma, Texas, and southwestern Louisiana, making discovery of two new stocks, besides greatly enriching the general sum of ethnologic knowledge for the southern region.

On a third visit to Louisiana, in 1886, he discovered the remnants of the Biloxi and Tunica, putting both languages on record for the first time, and thus establishing the Siouan connection of the one and proving the other to constitute an additional distinct stock. He then crossed the Rio Grande into Tamaulipas, Mexico, just in time to get about all that was left of the Carrizo language from the last half-dozen persons who spoke it, being almost the sole surviving representatives of the Pakawan stock which once held both banks of the lower Rio Grande. This journey extended as far south as the Tlascaltec colony of Saltillo, Mexico.

His studies of the Gulf tribes were summarized in his elaboration of the *Creek Migration Legend*, published in two volumes in 1884 and 1888. This was supplemented by his study of the extinct Karankawa tribe and language, published in 1891. In these southern researches, particularly in the documentary sources of information, his intimate knowledge of French and Spanish proved an invaluable equipment.

At the same time, as throughout his active career, he was independently giving attention as opportunity permitted to Indian languages past and present, in every section of the country, partly by sifting of old missionary catechisms and similar forgotten documents; partly by utilizing vacation trips, but chiefly by systematic interviewing night after night of the numerous Indian delegates visiting Washington during the Congressional sessions. Most of this miscellaneous material is still in manuscript. As ethnologic editor

for various journals he noted the progress of scientific discovery in the extra-limital regions, so that it is doubtful if there is an important native language from the Arctic shores to Cape Horn that has not at some time been the subject of his personal attention. Among these miscellaneous studies one of the most important was that upon the Beothuk, an extinct people of Newfoundland, which also he established as a distinct stock.

In 1890 appeared his great monograph on *The Klamath Tribe and Language of Oregon*, published in two parts as Volume II of Contributions to North American Ethnology, and comprising altogether more than 1,500 quarto pages. The material was procured by extended research among the Klamath on their home reservation, supplemented by visits to their cousins, the exiled Modoc in eastern Oklahoma. As an exhaustive study of an American language it stands almost alone and may fairly be said to mark an epoch in the science of linguistics.

In the historic Algonquian area, covering two-thirds of eastern United States and Canada, Dr Gatschet had personally given attention to some fifteen cognate languages or dialects. Shortly after the publication of his Klamath monograph he was commissioned by the Bureau to collate these results into a comprehensive comparative grammar of the Algonquian languages. In this great undertaking, which might well have been the life choice of a younger man, he was engaged when stricken by the lingering illness which culminated in his final disability and retirement. His initial labor in this direction centered upon the Peoria, representing the famous Illinois confederacy, once the leading people of the Ohio region, but now reduced to a small mixed-blood remnant in eastern Oklahoma. For this language his manuscript material in possession of the Bureau and awaiting final elaboration by a future worker is probably equal in extent to that of his published Klamath work. The dictionary portion alone contains some ten thousand listed words.

Besides the publications already noted, Dr Gatschet was the author of a large number of shorter papers on special linguistic subjects in English, French, and German, on both sides of the water. He edited for years a series of linguistic and ethnologic

notes in *The American Antiquarian*, and contributed frequent reviews to the *American Anthropologist*, *The Nation*, *Science*, *The American Naturalist*, and other journals.

His manuscript linguistic material deposited with the Bureau of American Ethnology covers nearly one hundred languages and dialects, including, among others, Achomawi, Adai, Alibamu, Apache, Arapaho, Attacapa, Bannock, Bidai, Biloxi, Caddo, Catawba, Cherokee, Cheyenne, Chickasaw, Chimariko, Choctaw, Chumash, Clackama, Clatsop, Coahuilteco, Comanche, Comecrudo, Cotonam, Delaware, Guatuso, Haname, Havasupai, Hitchiti, Isleta, Kalapuya, Kansa, Karankawa, Kickapoo, Kiowa, Kiowa-Apache, Klamath, Koasati, Kutenai, Lipan, Maidu, Maya, Miami, Micmac, Modoc, Mohawk, Molala, Muskogi, Muskwaki, Mutsun, Narraganset, Natchez, Nez Percé, Ojibwa, Ottawa, Passamaquoddy, Penobscot, Peoria, Potawatomi, Queres, Sauk, Seminole, Seneca, Shasta, Shawnee, Shetimasha, Shoshoni, Tlascaltec, Tonkawa, Tunica, Umpqua, Warmspring, Wichita, Yavapai, Yuchi, and Zuñi.

His close attention to study, to the neglect of physical well-being, at last brought about a complication of diseases which grew more serious with advancing age, resulting in his retirement from the Bureau in the spring of 1905. From that period the malady progressed rapidly to the close. His wife, who survives him, was his constant attendant to the end, as for years she had been the helpful companion of his work and travels.

Funeral services, conducted by the Reverend G. C. Carter, of St Andrew's Episcopal Church, were held on Tuesday afternoon, March 19, at the residence, where tributes to the memory of the friend and scholar were paid by several of his old associates, notably by Major Gilbert Thompson, of the United States Geological Survey, a comrade of his earliest governmental service thirty years before. The interment was made on the following day at Mount Peace Cemetery in Philadelphia.

Dr Gatschet was a member of the American Folk-lore Society, the American Association for the Advancement of Science, American Philological Association, American Philosophical Society, Anthropological Society of Washington, Washington Academy of Sciences, National Geographic Society, Anthropological Society of

Vienna, Historical Society of Canton Bern, and of other scientific, literary, and political organizations, besides which, following a common Swiss custom, he held a beneficiary membership in the Bookbinder's Gild of Bern. He was also a member of the local Swiss society, the Grütli Verein. In 1892 the University of Bern conferred upon him the doctor's degree.

The village of St Beatenberg, in the picturesque Bernese oberland, looks out across the blue Brienzersee to the snow-capped Jungfrau with its background of dark forest and glistening glacier. The daily contemplation, in his formative period, of the panorama of lake and mountain, perennial verdure and eternal desolation, bred in Gatschet, as in all his countrymen and women, the intense love of Nature in her greater aspects that to the Swiss exile becomes a latent Heimweh to which the sight of a distant hill or the sound of a clear flowing stream is like the challenge of the Alp horn on the bridge of Strasburg. Under the surface, and unknown to all but his most intimate companions by reason of many peculiarities of temperament and foreign habit, he carried the soul of a poet and the heart of a little child. He loved music, of which he had considerable technical knowledge, and was as familiar with the great operatic composers as with the German poets. He needed no dictionary for his classical quotations. His knowledge of history was wide and profound, and his grasp of the ordinary subjects of scholarly interest was apparent to the most casual listener. Having no gift for speaking or organization, he seldom participated in scientific gatherings, but preferred to work alone and by his own method. In fact, it was practically impossible for him to collaborate upon a joint undertaking. His chief characteristics were thoroughness and absolute honesty. He had no patience with the pseudo-science which finds it easier to elaborate theories than to search out facts. In his own words, in rebuke of one such instance, "To guess is not science." Secure in his own honor, he made no attempt to build up a reputation at the expense of other men, but gave to each his due credit. Loyal in his friendships, he was quickly responsive, and held a promise as an obligation. He found his chief relaxation in long country walks, and in the last weeks of his life, when strength and memory were gone, his thoughts were of the moun-

tains, and he imagined himself climbing the Alps with the sister of his childhood.

The science of philology is hardly yet naturalized in this country, and from its very nature can find appreciation only in the highest circle of scholarship, but within this circle Gatschet's work was recognized as authoritative. When philology shall take its proper place as the essential basis of anthropology his name will stand, with those of his distinguished countrymen, Gallatin and Agassiz, in the front rank of American science.

Ihr Matten, lebt wohl!
Ihr sonnigen wieden!
Der Senne muss schieden,
Der Sommer ist hin.

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J. M.

PROCEEDINGS OF THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON

Meeting of November 20, 1906[1]

The 393d meeting was presided over by the newly-elected President, Mr J. D. McGuire.

Dr ALES HRDLICKA exhibited two remarkable crania from Florida, showing deformation due to artificial flattening of the forehead. One of the skulls is the largest of four thousand in the collection of the United States National Museum, its thickness reaching half an inch. The skulls are from Cedar Keys and the Everglades respectively. Dr Hrdlicka surmised that these may be skulls of Indian immigrants from the West Indies, where cranial deformation is of the same high type.

The paper of the evening was by DR W. J. SPILLMAN, on *Heredity, with Special Reference to Man*. The speaker first called attention to the fact that current theories of heredity relate more particularly to the development of the individual from the fertilized egg than to the transmission of hereditary characters from one generation to another. Brief résumés were given of the theories of Darwin, Weismann, and DeVries. The principal features of the theory that hereditary characters are properties of chromosomes, or groups of chromosomes, were outlined. The relation between this theory and Mendelian inheritance was pointed out. Since the behavior of the chromosomes of this character must determine the laws of inheritance, the chromosomes were followed through ontogenetic development, particular attention being given to the reduction division and its meaning. One remarkable deduction from the chromosome theory is that in each individual of the human race there are only sixteen lines of inheritance. This means that if the chromosomes retain their identity and their relation to hereditary characters from generation to generation, an individual cannot be related to more than sixteen ancestors of a given generation. Thus, in the fifth generation of ancestors there are thirty-two individuals. If the number of chromosomes in man is sixteen, as is supposed to be the case, an individual cannot be related to more than one-half of his fifth generation of ancestors.

[1] All the meetings noted in these Proceedings were held in the assembly hall of the Cosmos Club at Washington.

The behavior of Mendelian character pairs was illustrated. The forces governing variation in chromosome functions were pointed out. It was shown that in some organisms every chromosome in the nucleus is similar to every other in its relation to hereditary characters. This lends credence to the view that in all organisms there may be many characters which are related in some way to all, or at least a large number, of the chromosomes. The probability was pointed out that all chromosome functions continually attempt to vary. In trivial characters this variation is unrestricted, and furnishes the basis for specific distinctions. In vital characters natural selection while not preventing variation does prevent differentiation, that is, chromosome functions if they vary must vary together. Organic heart disease and other organic weaknesses were mentioned as possible results of unfortunate changes in chromosome functions relating to vital characters.

Reversion was explained as the sudden appearance of a long lost character, due to the accidental bringing together of its more or less modified factors by cross-breeding. It was pointed out that two groups which no longer interbreed invariably become more or less differentiated in all their characters. This accounts for distinct racial characters. Such characters would in time become specific, or even generic.

Translocation of tissue and reversion were suggested as possible explanations of abnormal dental elements, such as those found by Dr Hrdlicka and other investigators.

Meeting of December 4, 1906

The 394th meeting was held December 4, 1906, the President, Mr J. D. McGuire, in the chair, and 100 members and guests present.

HON. FRANCIS E. LEUPP, Commissioner of Indian Affairs, addressed the Society on *The Indian from the Administrative Point of View*. Mr Leupp briefly outlined the steps that the Government has taken in its administration of Indian affairs, dwelling first on its gathering of the Indians on large reservations at a time when the military forces were inadequate for policing the frontier. He pointed out the fundamental error of this, at that time, seemingly necessary step, and showed that no race, not even one with the stamina of the Anglo-Saxon, could have thrived under such a condition thrust upon it.

At the same time that the Indians were being concentrated on these reservations, the country over which they had roved was being laid bare of game. Of course, such game as then remained on the comparatively limited reservation areas was insufficient for support. The second great

Indian problem arose to confront the administration: How should the Indian be fed? And then grew out by acts of Congress, either in accordance with treaties or as gratuities, the ration system.

Having made these initial blunders, the Government proceeded to make another. It argued that as the Indians once occupied all the land, certain portions were due to them individually, and that each and every Indian if given an allotment would be made into a self-supporting farmer. This was a hope as absurd in its application, the Commissioner pointed out, as if each one of his audience should be set down upon 40 or 80 or 160 acres or so of land and expected to make a living from the soil. The Indian race, like any other, possesses varied capacities, and while some Indians could undoubtedly be made into successful farmers, the Commissioner expressed himself emphatically as not being one of those who believed that the Indian question could be settled in that way alone.

Mr Leupp then pointed out the efforts he was making to recognize the diverse capacities of the Indians. He was trying to so operate the great machinery of the Indian Service that each individual Indian would be able to work at what he as a man was best fitted for. The longest stride he had taken in that direction was the establishment of an Indian labor bureau in the Southwest. This was inaugurated at the very beginning of his administration, and has now proved itself a success. The agent in charge of this bureau has camps of Indians at work on the Santa Fé Railroad, on the sugar-beet farms of Colorado, and on irrigation and other works, all on an absolutely business basis. He simply sees that the Indians get their pay promptly and fully, and that their sick are cared for. The Commissioner took the audience into his confidence by telling them that he was proposing to extend this system in the North, and that in the North also he had just started what might be termed a complement of it — namely, that whereas in the Southwest he had succeeded in bringing Indian labor to the employment markets, he was now in the Northwest endeavoring to bring produce markets to the Indians who farm, and that on the first of the coming year a man would enter upon the duty of finding out ways and means of disposing profitably of the products of the Sioux reservations, and so be able to give the Indians some definite assurances that whatever they raised on their allotments could and would be salable at an advance on the cost of production.

Perhaps at no point in the Commissioner's talk was his attempt to bring all the forces of the administrative machine to bear directly on the Indians themselves more plain than in what he said about the day schools. The little day schools, very simple affairs with one teacher and one house-

keeper, he had been encouraging in every spot where the Indians are thickly enough settled to support a school of even fifteen children; and it is these schools which are really beginning at this late day to do the work which the elaborate Indian school system should have done in the first place. He told of his surprise in a Hopi dwelling at finding the table set and the house kept in a way that would have done credit to the cleanliness and skill of many good white housekeepers; and the mother of the family, replying to his inquiry, said she had learned all she knew from her little daughters who were going to the school at the foot of the mesa. There, each day, they had learned washing, or cooking, or how to make a bed or set a table, and every night had told their mother about it. In this way the day schools are teaching both the old generation and the new.

The Commissioner dwelt on his endeavor to foster Indian art and keep the ancient quality of it, while at the same time directing it into channels where it would be really of use in our own civilization. He illustrated this evolution by referring to the Indian-made desk in his office, on which he uses Indian baskets for papers to be distributed to the various divisions. The first basket he succeeded in getting after much effort is a very unstable affair, but he keeps it as an example of a stage in the process he is trying to bring about. The other two baskets are of very business-like shape and structure, and at the same time preserve absolutely the ancient Indian designs. In this connection also Mr Leupp has in his office other specimens of Indian handiwork, new and old — the furniture of the room being work of young Indians at the Government schools, the walls being decorated with old Indian ornamentation, and the floors with Navaho rugs. He hopes to extend to other points the work which Miss Angel Decora, a Winnebago Indian, is doing at Carlisle in developing the artistic gifts of Indian children along the lines of their own racial ideals as to design and color.

In conclusion the Commissioner showed the permanent value of the contribution to the complex civilization of this country which could come from treating the Indian as an individual member of society rather than as a mere element in a tribal unit.

Dr C. Hart Merriam, commenting on the Commissioner's remarks, said that the California Indians were making absolutely no progress whatever in their ability to put their money to proper use, and that he considered this inability one which was likely to lead to the total ruin of the Indians. The Commissioner announced that this was a condition and a danger not peculiar by any means to the California Indians: it was found throughout the country. At the same time, he pointed out, much

had been done and more was being done to influence the Indians in this matter. For a single example, forty-nine Navaho school boys and three adults brought home after six weeks' labor in the Colorado beet-fields last summer, $1,672.56. This amount was net profit, and was put aside by the children for the purchase of sheep; and they had also made arrangements that, while engaged next summer in similar work, their old people should take care of their sheep for them. This is one instance of many which, though scattered, are still very hopeful signs coming in from all over the country, that at least the rising generation of Indians can husband their money and use it profitably.

Meeting of December 18, 1906

At the 395th meeting President McGuire occupied the chair and 21 members were present.

MR JAMES MOONEY announced the death of Jeremiah Curtin and paid a tribute to this accomplished linguist, who for a number of years was a member of the Society.

DR I. M. CASANOWICZ read a paper on *Two Planetary Cabalistic Amulets in the United States National Museum*. These amulets belong to the magnificent Benguiat collection of Jewish ceremonial objects which constitutes an important part of the Division of Historic Religions in the National Museum. They are in form of bronze disks, three inches and a quarter in diameter, with suspension loops, and probably originated in the seventeenth century in the Netherlands. The first represents on the obverse the figure of Mars and his attributes, the sword, the club, and shield, and the astronomical symbols of the planet and of Aries and Scorpio, surrounded by a French and Hebrew legend to the effect that the amulet is to serve according to the intention of Corson, probably the name of the original owner. The principal device on the reverse is a magic square, i. e. a series of numbers arranged in quadratic form so that the sum of each vertical, horizontal, and diagonal column is the same as that of the others. Above and beneath the magic square are geometrical figures, more or less cruciform in outline. The remainder of the space is filled out with names of angels in Hebrew. The second is appropriated to Mercury, and has on the obverse the figure of Mercury and his attributes, the winged cap (*petasus*) and staff (*caduceus*), and the astronomical symbols of the planet and of Gemini and Virgo. The magic square on the reverse consists of eight columns, each adding up to the sum of 260; while that on Mars has only five columns, each amounting to 65. The other features are the same on both amulets.

By way of explanation of the amulets, Dr Casanowicz gave a brief exposition of the Cabala, the mystic philosophy of the Jews concerning God and the Universe. One of its principal doctrines is that God manifested Himself through ten emanations, called *sephiroth*, spiritual potencies or agencies which served as intermediaries between the Infinite and Absolute and the world of sense. Corresponding to the ten sephiroth cabalistic cosmology or astrology conceives the visible universe to consist of ten concentric spheres. Each sphere has its own class of spirits operating in it. The spheres of the seven planets were supposed to be of the greatest importance to mankind, as each planet was believed to preside over a certain domain of human affairs. Amulets are the means to secure to the possessor the influence of the powers of the planetary spheres. Thus a cabalistic formula says a talisman of Mars in "red brass" will have the power of striking terror to one's enemies and compelling them to submit. The magic square is credited with great magical potency also by the Hindus and Arabs.

MR W. E. SAFFORD presented a paper on *The Necropolis of Ancon, Peru*. The necropolis is situated in a vast dry region traversed with narrow ribbons of green along the valleys of rivers descending from the Andes. The burials were made on waste grounds in square chambers excavated in the earth and roofed with beams thatched with lichen and reed mats. Therein were put the bodies tied up in large bales and having wands of bright-painted reed at the sides of the head. With the dead were placed baskets, bronze objects, vases of fine pottery, textiles, and food consisting of crabs, corn, beans, fruits, and nuts. Invariably from the neck of the dead was suspended a bag of cocoa leaves, and frequently in the graves of children were found bodies of pet dogs and parrots. Mr Safford exhibited many examples of pottery and superb textiles.

Meeting of January 9, 1907

The 396th meeting was held January 9, 1907, with 26 members present.

MISS ALICE C. FLETCHER addressed the Society on *A Visit to the Hill of the Star, Mexico*. This hill stands in the valley south of Istapalapa, on the shores of Lake Xochimilco, and is skirted by the Viga canal. Causeways built across the lowlands and lake extend to its foot and many trails cut its sides. On the summit was a temple which now is represented by a mass of débris 12 to 13 feet deep, and near the base of the hill are several caves. The Temple of the Star was built on the spot where the great flint knife fell from heaven and created man and gods. The myth

seems to relate to the sun and the origin of fire. The hill was the focus of a new-fire ceremony in which a procession of celebrants marched down the causeway from Mexico to Istapalapa and ascended the hill. When the Pleiades were at the zenith human sacrifice was made and new fire kindled.

DR JOHN R. SWANTON read a paper on *Indian Tribes of the Lower Mississippi*, presenting some of the results of an extended study of the living and extinct tribes of this region. It has been possible by means of names and early accounts of raids and customs to ascertain the distribution and affinities of these tribes. In no district of North America is there such low culture, the tribes living on alligators, fish, etc., and roaming about. One of the important discoveries made by Doctor Swanton is that the Natchez is not a separate stock, but is a dialect of Muskhogean. The Natchez had a strange system of castes and a remarkable fire cult. They believed that they were descended from a being behind the sun's disk, and that fire was given them by a culture hero who was son of the sun.

Miss Fletcher remarked on the extreme isolation of the Gulf tribes, and Mr Mooney said that the Gulf coast was a migration line by which tribes came from Mexico, and that an examination of the tribes of Tamaulipas will show the links with other tribes on the Gulf.

Meeting of January 22, 1907

At the 397th meeting 16 members were present.

MR JAMES MOONEY read a paper on *A Kiowa Buffalo Shield*. The Kiowa, said Mr Mooney, have traditions of migrations covering a considerable period, but do not know anything concerning their tribal origin. They are horse people and used shields, but no shields are made now. These shields were covered with symbolic decorations which were supposed to give protection as a fetish between man and a spirit being. The study of the symbolism of these shields has been taken up and at last the field work has been brought to completion. There were four hundred shields, but now only eight remain, five of these being in the National Museum. They were made from skin of the buffalo bull, taken under the throat and heated and thickened over a fire. The symbols that were painted on the shields were revealed in dreams following an invocation of the spirits, hence not every Indian knows the symbols of every other Indian.

DR WALTER HOUGH described *Ancient Pueblo Basketry and Sandals*, and exhibited a number of specimens collected by the Museum-Gates Expedition to Arizona and New Mexico in 1905. There had been gathered

from portions of the Pueblo region examples of ancient basketry, and it is now possible to make a beginning of the study of the material and its connection with the ancient pottery. Rich collections have recently been obtained from southeastern New Mexico, containing representatives of nearly every type of basket weaving, and the only modern tribe in which such variety exists is the Hopi. Sandals also are among the most common aboriginal objects in caves and débris of cliff-dwellings. They vary from a simple flat sole plaited of broad yucca leaves to an elaborately woven sole ornamented with textile patterns. From caves in the high region come boot-sandals and over-sandals, for protection against snow. The range of sandal-weaving tribes in the United States was discussed and the general substitution of the moccasin for the sandal was stated to have taken place centuries ago.

Meeting of February 5, 1907

At the 398th meeting President McGuire occupied the chair and 24 members were present.

MR F. P. SARGENT, Commissioner of Immigration, addressed the Society on *What is the United States getting in Immigrants Physically and Mentally?* Mr Sargent called attention to the composition of the nation, which has been made up of aliens, and fortunately most of the immigrants have been of the right sort. This is a new nation and there is plenty of room, but in view of the inferior character of the greater part of the accessions at present there is need of wise restrictions. Last year more than a million immigrants entered the country, and they will continue to come so long as we offer advantages such as we do today. Mr Sargent suggested that agencies be established at European ports before which immigrants may appear for examination, and that immigrants should be dispersed over the country and not allowed to congregate in the large cities. He thinks illiteracy should not disqualify, but that the age of the immigrant has much to do with his value as a citizen; thus young children are the best material.

In the discussion which followed Mr Sargent's interesting address, several speakers agreed that immigrants differ from the Americans, not in mental but in physical features: that the stimulation of the new country will improve them, and that a valuable cross will be formed.

Meeting of February 19, 1907

The 399th meeting was called to order by President McGuire, 25 members being present.

DR WALTER HOUGH presented a length of cord covered with quill braid, which when wrapped around a card of proper width shows a conventional human figure. The specimen was taken from a Chinook skirt in the National Museum, collected by Lewis and Clark.

DR O. F. COOK read a paper, *Principles of Evolution*, and illustrated his remarks with tables and diagrams and with typewritten synopses which were distributed among the members. An outline, prepared by Dr Cook, follows:

I. — *Types of Evolutionary Theories*

Static Theories view species as normally stationary, and ascribe evolutionary motion to environmental causes of adaptation. The static theory commonly called Darwinism treats adaptations as caused indirectly through natural selection, by the survival of the fittest of the individual variations. The static theory of Lamarckism treats adaptations as direct results or responses to environmental influences.

Saltatory Theories view the species as normally stationary except for rare intervals of sudden transformation or "mutation" caused either by the environment or by internal "forces" of unknown character. Selection can determine the survival of mutations adapted to environmental conditions, but exerts no direct adaptive influence.

Determinant Theories view species as moving gradually in definite directions in obedience to internal "principles of perfection" or "mechanisms of descent." Adaptation depends on the coincidence between evolution and environment; selection exerts no direct influence.

Kinetic Theories view species as normally in motion, but not in a single or definite direction, and without reference to environmental causes. Adaptations are induced by the selective action of the environment, which restricts and deflects the normal evolutionary motion of the species. Selection is accepted as an explanation of adaptation, but not as a cause of evolutionary motion.

II. — *Evolution Distinguished from Adaptation and Speciation*

Specific Constitution of Living Matter. Organisms exist in large groups of freely interbreeding individuals, commonly called species.

Evolution is a process of change by which the members of an organic group become different from their predecessors, or from other groups of common origin.

Adaptation is the attainment of characters which place the species in more advantageous relations with its environment.

Speciation is the attainment of differential characters by segregated groups of organisms, that is, by subdivisions of older species.

Adaptation represents the bionomic aspect of evolution, speciation the taxonomic. When viewed too exclusively from these standpoints, adaptation and species formation have appeared to many writers as causes of evolution, but under the kinetic or physiological interpretation they appear only as results of evolution, quite incidental to the more general phenomenon of progressive change.

Bionomic Conditions of Evolution

Isolation of an organic group implies such a separation that interbreeding with the members of other groups is excluded. Isolated groups of organisms always become different, but there is no indication that isolation is an evolutionary factor in the sense of causing or contributing to organic development. Its influence is negative rather than positive, for small groups advance less rapidly than large, and often deteriorate through inbreeding and inadequate diversity of descent.

Selection is a form of isolation which separates from the species the individuals which are lacking in the expression of certain characters. Under unconscious or natural selection only the most deficient are rejected; under conscious or artificial selection only the most proficient are saved. Selection, by deflecting and confining the evolutionary motion of the species to particular channels, conduces to the adaptive specialization of characters, but it is not an actuating cause or principle of evolution.

Symbasis is the normal evolutionary condition of free interbreeding with adequate diversity of descent, as shown in natural species. Symbasis is to be distinguished on the one side from the narrow inbreeding which induces abnormal mutations, and on the other from the wide cross-breeding which produces abnormal hybrids.

Analysis of Intraspecific Differences

Differences of Growth Stages. Changes of form, structure, and function shown in the life history of normal members of the species, including metamorphosis and alternations of generations and structural phases.

Differences of Adjustment to Environment. Differences which arise from the ability of individual members of the species to adjust themselves to varied environmental conditions.

Differences Contributing to Descent. Differences which contribute to diversity of descent and free interbreeding, but are independent of growth stages and environmental adjustments. Descent differences include "fortuitous individual variations," sexual specialization and polymorphism.

Differences of New Variations. Characters which have not existed previously among the ancestors of the individual; genetic variations which contribute to heterism and to evolutionary progress.

Differences of Abnormal Development. Characters diverging from those of the normal members of the species, accompanied by a deficiency of vitality and fertility.

The general discussion was participated in by Messrs Holmes, Green, Hrdlicka, Stetson, and Hough.

Meeting of March 5, 1907

The 400th meeting was held on the above date, the President, Mr J. D. McGuire, in the chair, and 20 members and guests present.

DR A. HRDLICKA presented *A Brief Report on the "Ancient Man" of Nebraska (Based on Personal Examination)*. The site on Long's Hill, near Florence, Nebraska, was visited by Dr Hrdlicka, who has also examined all the bones taken from the excavations. He found that although the bones were scattered through the soil, they are related, are similar in color, are normally developed, and are like Indian bones. The speaker stated that, as the bones have been gnawed by rodents, they may have been scattered in the loess by burrowing animals. There is, he thinks, no ground for belief in very ancient man at Long's Hill.

The paper was discussed by Dr W J McGee and Dr Daniel Folkmar.

The paper by PROFESSOR O. T. MASON, *First Account of the W. L. Abbott Basketry from Southern Malaysia, now in the United States National Museum*, was read by the Secretary. The paper gave the results of a study of a large collection of basketry from the peninsula of Malacca, the small archipelagoes east and west of Sumatra, and western Borneo south of Sarawak, collected and presented to the National Museum by Doctor William L. Abbott of Philadelphia. The collection is of great value and comes at an opportune time for comparison with the vast amount of material now being sent to the United States from the Philippines. It also relates itself to the work of Japan, China, and the southeastern Asiatic states. The materials, forms, structural parts, and technical processes all have relation to the environment. In no other part of the world are such accommodating plants to be found for basketry. The forms grow out of the demands of a tropical climate and the industries occasioned thereby. The structural parts have especial relation to a people who, by reason of the climate, wear little clothing; so that many of the Abbott baskets may aptly be named the "trouserless pocket," in

which man or woman carries everything transportable. The principal point of interest, however, is the great variety of technical processes — including bastwork, barkwork, and spathework; weaving, under many names; coiling in great varieties; besides lacing, plaiting, netting, knotwork, and joinerwork, in bewildering technic. These were all examined carefully and described in appropriate language, which may be used in a comparative study of the Abbott collection with others from neighboring areas. The paper was illustrated with examples of various kinds of work, as well as with photographs.

Meeting of March 19, 1907

At the 401st meeting 15 members were present. The death of Dr Albert S. Gatschet was announced.

MR GERARD FOWKE, on the invitation of the President, presented an account of his field work in Missouri for the Archæological Institute of America, and described a new type of burial and a new character of mound discovered by him.

DR J. B. NICHOLS read a paper on *Numerical Proportions of the Sexes at Birth*. (This paper has been published as Part 4, Volume I, of the *Memoirs of American Anthropological Association*, February, 1907.)

DR DANIEL FOLKMAR, who was formerly lieutenant-governor of Bontoc, read a paper on *Social Institutions of the Head-Hunting Igorot*. Dr Folkmar's remarks applied particularly to the Tinglayan Igorot, of which tribe he has made a special study. The Tinglayan live farthest north of the Igorot tribes of Luzon and are considered more advanced in social organization and arts. The chief functionary of the Tinglayan is called "Old man who makes the law," who is feared and respected on account of his occult powers and who is back of the puppets appointed by the Government. His office seems to be self-assumed and his practice is by omens from the idau, or sacred bird, which is consulted on all occasions. The head hunt is started by the old man after consultation with the idau, and it is said that the *presidente* of a village about to engage in a hunt is always notified and joins the party. The hunters take coup on the body dead or alive and are by this act entitled to certain tattoo marks on the breast. Heads are taken in order to insure good harvests.

In discussing the paper, Dr Swanton said that the custom of coup and tattoo in taking a head is similar to the customs of certain American Indian tribes.

Meeting of April 2, 1907

The 402d meeting was held with President McGuire in the chair and 50 members and visitors present.

PROFESSOR EDGAR L. HEWETT addressed the society on *The Antiquities of Northern Mexico*, illustrating his remarks with numerous lantern slides. The ancient culture of western Chihuahua, eastern Sonora, and northern Sinaloa was sketched by Professor Hewett, who recently returned from explorations in Mexico for the Archæological Institute of America. Views were shown of the Casas Grandes group in Chihuahua, and of Casa Grande in Arizona, structures very similar in method of building; of mounds of artificial origin and enigmatic purpose existing in the Casas Grandes valley; of the trincheras of Sonora; of caves containing great granaries of basketry plastered with clay; and of cave houses which touch the historic period. Views of the Tarahumare Indians and their houses were also shown. Professor Hewett explained the trincheras, which consist of walls constructed across small valleys, the earth-filling back of them forming terraced fields. These works are of enormous extent along the Sierra Madre, and the speaker stated that they have done much to conserve the forests and prevent the excessive wearing and gashing of the country so common in Arizona.

Meeting of April 16, 1907

At the 403d meeting 25 members and visitors were present.

DR HRDLICKA exhibited an exceptionally low-browed skull from a mound in Illinois. DR I. M. CASANOWICZ presented some remarkable Jewish talismanic ornaments from the Benguiat collection. DR WALTER HOUGH brought before the Society a series illustrating the extraction of yucca fiber by the ancient Pueblos of New Mexico.

The paper of the evening was by DR E. COREY STARR on *Observations, Medical and General, on the Northern Navaho*. The region in which these Navaho live is the Chusca and Carrizo mountains of Arizona and New Mexico. The country is semi-arid and has the characteristic xerophytic flora. Navaho legends tell of a country in which they once lived and from which they were driven into a land of ice, thence migrated south again. They have a legend of an emergence from the underworld and say that men were created from white corn and women from yellow corn. At one time a great man-devouring eagle preyed upon them. Dr Starr says that the Navaho are good people, and moral according to their standards. They are inveterate gamblers, but this custom is descended from early times when they practised it as a means of exchange. Dr Starr's communication was replete with interesting information and was well illustrated with specimens of Navaho handiwork.

Meeting of April 30, 1907

The 404th regular meeting was held on the above date, with 22 members in attendance.

MR C. S. SLOAN, Geographer of the Census, read a paper entitled *The Southwestern Movement of the Center of the Negro Population, 1790–1900.* Mr Sloan stated that there are now about ten million negroes in the United States, and that their rate of increase is nearly that of the whites. The center of negro population in 1790 was in Dinwiddie county, Virginia, and it has gradually moved to its present position in eastern Alabama. The cause of this movement may be the filling in of Texas and Oklahoma by settlers, or that the negro is moving into a zone which is better adapted to his racial idiosyncrasies. It is found that he is gradually focusing within the Austro-Riparian biologic zone, which comprises the states in which cotton can be grown, namely, the South Atlantic and South Central states. The paper was excellently illustrated with maps.

DR D. S. LAMB presented a communication on *Morbidity and Mortality of the Negro.* The speaker said that the subject is important and world-wide, and, although much has been written respecting it, authors differ widely in their generalizations because they have treated as a unit the complex mixture classed as Negro. Mixtures necessarily create a difference in anatomy, physiology, etc., and the bulk of what is recorded is unscientific. There are a few diseases peculiar to the pure-breed negro — sleeping sickness, yaros, ainhum, and elephantiasis, — but while these were introduced in the United States, they died out at the close of the slave trade. Dr Lamb concluded that it will be impossible to determine whether the negro differs in morbidity and morality from the races with which he is in contact without taking into account the proportion of racial mixture.

Meeting of May 14, 1907

The 405th meeting was presided over by Mr J. D. McGuire, with 32 members and visitors in attendance.

MR AINSWORTH R. SPOFFORD presented a paper on *The Virginia Aborigines as Seen by the Early Colonists.* The information was derived exclusively from the contemporary sources of Hamar, Percy, Robert Johnson, Newport, Spelman, Capt. John Smith, and others, who, though they were not inured to modern critical and accurate methods, had the advantage of being eye witnesses. The aborigines are generally characterized by these writers as well-formed, tall and straight of stature, savage and free as nature, alien alike to the virtues and vices of civilization, and

at first gentle and kind to the whites, although crafty and seldom forgetting an injury. They were without culture and education, but endowed with no mean measure of natural intelligence. Their food was obtained from a fruitful country and from game of all kinds of the land and the water. Their clothing was made from the skins of animals, especially the bear, adorned with beads; the common people contented themselves with girdles made of grass. Their habitations consisted of structures made of logs, thatched with grass and matting. The houses consisted of a single room, with two doors and no windows. The villages commonly had no more than twenty dwellings. The larger area of the country was covered with forests; but the natives cleared patches of land for agricultural purposes by felling the large trees and burning the young ones.

Mr Spofford gave a detailed description of the methods of sowing, planting, and harvesting. The cultivation of tobacco occupied a considerable area. It was considered as a mysterious plant and never offered as a sacrifice. It was smoked by the natives in clay pipes. No chewing of tobacco is anywhere mentioned. More important than agriculture was the pursuit of game by land and water, which was carried on with great energy. The speaker described the ornaments, implements, and household utensils, the weapons, games, and musical instruments of the aborigines. Their medical system was a combination of superstition and herb therapeutics. Polygamy was in vogue; the wives were bought. The government was an absolute monarchy; punishment was severe and cruel. The religion was a kind of dualism consisting in the belief in a good god who created the world, and in a devil who caused all the evil and misfortune to punish men for their sins. Some writers, however, describe the natives as sun-worshipers. The sacrifice of two or three young children occurred by burning. Belief in immortality in the form of a kind of metempsychosis. The whites were at first zealous in converting the natives to Christianity, though with scant success. After the widespread massacre by the Indians in 1622, the motto of the whites was, extermination of the aborigines.

Discussing the paper, Mr Mooney said that the early explorers, by reason of their contempt for the natives, saw many things without understanding them. On the whole, he said, the whites were not behind the Indians in treachery and cruelty. The custom of calling a priest to the sick is also found in the Bible. Mr Mooney thinks that the number of Indians at the time of the discovery in the whole of Virginia was from seventeen to twenty thousand.

Meeting of May 28, 1907

The annual meeting was held May 28, 1907, with President McGuire in the chair.

The Treasurer's report showed that during the fiscal year ending December 31, 1906, the total receipts amounted to $587.78, the total expenditures to $398.22, leaving a balance of $189.56.

Mr J. N. B. Hewitt presented an extract of a field report by Dr J. R. Swanton, bearing on the scattered remnants of the Indian tribes in Louisiana.

Obituary notices were presented as follows: (1) Dr Cyrus Thomas on Dr Ernst Förstemann,[1] of Germany, honorary member of the Society. (2) Professor W. H. Holmes on Señor Alfredo Chavero.[2] (3) Mr James Mooney on Dr Albert S. Gatschet.[3] (4) Dr A. Hrdlicka on Professor Emil Schmidt.[4]

The election of officers for 1907–08 resulted as follows: *President*, Dr Ales Hrdlicka; *Vice-Presidents:* (*A*, Somatology) Dr D. S. Lamb; (*B*, Psychology) Dr J. Walter Fewkes; (*C*, Esthetology) Professor W. H. Holmes; (*D*, Technology) Dr Walter Hough; (*E*, Sociology) Mr James Mooney; (*F*, Philology) Mr J. N. B. Hewitt; (*G*, Sophiology) Miss Alice C. Fletcher; *General Secretary*, Dr Walter Hough; *Secretary to Board of Managers*, Dr J. R. Swanton; *Treasurer*, Mr George C. Maynard; *Curator*, Mrs Marianna P. Seaman; *Councilors:* J. Walter Fewkes, J. B. Nichols, James Mooney, J. N. B. Hewitt, J. R. Swanton, W. E. Safford, F. W. Hodge, I. M. Casanowicz, Sarah S. James, Paul Beckwith, and G. R. Stetson; *Committee on Communications:* W. H. Holmes, Alice C. Fletcher, James Mooney.

WALTER HOUGH,
General Secretary.

[1] See *American Anthropologist*, IX, 153, 1907.
[2] Ibid., VIII, 701, 1906.
[3] Ibid., IX, 561, 1907 (this issue).
[4] Ibid., IX, 236, 1907.

BOOK REVIEWS

The Non-Christian Tribes of Northern Luzon. By DEAN C. WORCESTER. *Reprinted from The Philippine Journal of Sciences.* Manila, P. I.: Published by the Bureau of Science of the Philippine Government. Vol. I, No. 8, October, 1906. 4°, 84 pp., 67 pl.

The appearance of a comparative, even though brief, study of the wild peoples of Northern Luzon by the Honorable Dean C. Worcester, Secretary of the Interior for the Philippine Islands, shows ethnologists in the United States that the scientific study of ethnology has sympathetic and strong support in the Philippine Government. In fact, it is to Secretary Worcester that the beginning of Philippine ethnologic study by Government support owes its origin, and his paternal care has more than once since given the work new lease of life.

The chief value of the present study lies in the comparative view of tribes and cultures it presents both by text and photograph. Secretary Worcester divides the non-Christian peoples of northern Luzon into two races, the Negritos and the Malays. He criticises the loose way in which many writers have designated the peoples he discusses. Blumentritt divides them into 36 tribes, the Jesuits into 26, and Dr David P. Barrows in the Census of the Philippine Islands divides them into four tribes. Mr Worcester says that in his opinion there are seven different tribes, viz, 1, Negritos; 2, Ilongots (Ibiloas); 3, Kalingas; 4, Ifugaos; 5, Bontoc Igorots; 6, Benguet-Lepanto Igorots; and, 7, the Tingians. He makes a sensible plea for scientific accuracy in the use of terminology, and says he designates groups of people as a tribe in the following sense: A tribe is "a division of a race composed of an aggregate of individuals of a kind and of a common origin, agreeing among themselves in, and distinguished from their congeners by physical characteristics, dress, and ornaments; the nature of the communities which they form; peculiarities of house architecture; methods of hunting, fishing, and carrying on agriculture; character and importance of manufactures; practices relative to war and the taking of heads of enemies; arms used in warfare; music and dancing, and marriage and burial customs; but not constituting a political unit subject to the control of any single individual nor necessarily speaking the same dialect." Using the term "tribe" in this sense it seems to me he is correct and accurate in the divisions of the peoples he has made.

A valuable synonymy for each of the tribes is given; the geographical distribution ("habitat") of each, so far as it is at present known, is presented, and then follows "a brief description of the physical characteristics of its members; of their dress and ornaments, including ornamentation of the skin by scarring or tattooing; of their buildings and settlements; of their hunting, fishing, agriculture and manufactures; of their methods of warfare and head-hunting; of their arms; of their music and dancing; of their marriage customs, and of their customs relative to the burial of the dead."

Mr Worcester is acquainted with groups of each of the seven tribes he presents in this study, and most of the data presented in regard to the Ilongots, Kalingas, Ifugaos, Benguet-Lepanto Igorots, and Tingians are of his personal observation. Considerable material in regard to the Negritos and the Bontoc Igorots is drawn from Volumes I and II of the publications of the Ethnological Survey for the Philippine Islands.

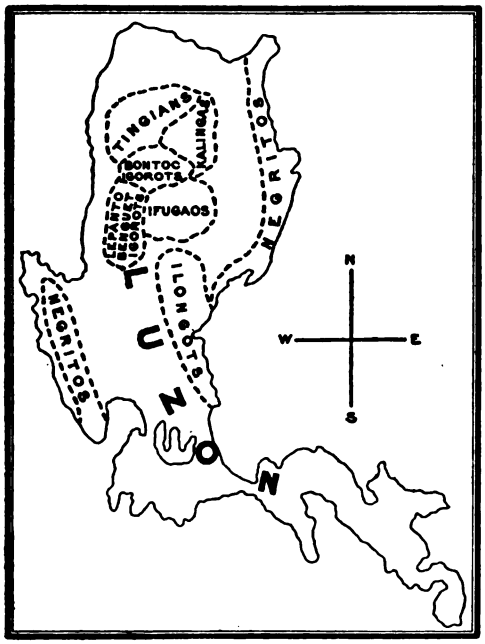


FIG. 37. — Tribes of Luzon.

To show the geographic distribution of tribes treated I present a sketch-map of the tribal areas. The central parts of the several areas may be relied on, but no claim is made for the accuracy of the limits, and outlying isolated small areas are not represented at all.

Secretary Worcester gives the Negrito synonymy as follows: Abunlon, Aburlin, Adang, Adanes, Adanginos, Adangtas, Adaugtas, Aetas, Agtas, Ahetas, Aitas, Attas, Balugas, Buquiles, Dumagat, Dumagas, Dumangas, Eta, Itas, and Parames. He notes that the Negritos are generally believed to be the aboriginal inhabitants of the Philippines. They are of dwarfish stature, but many are well formed. They are dark, sooty-brown in color, with woolly hair. The practice of pointing their

incisors is common. They do not tattoo their bodies, but do scarify them. Men wear normally a breech-cloth of bark or cloth, and the women a short skirt of the same materials. They subsist chiefly on animal and vegetal forest products. Dogs and chickens are their only domestic animals, and the latter are very few. The Negritos are fond of music, and have several specialized dances. They are somewhat inclined to be mischievous and thievish, but are timid and peaceful. In practice their families are usually monogamous, though polygyny is allowed.

All the other six tribes are said to be of Malay blood, though Mr Worcester thinks possibly the Kalingas may be proved to have Chinese or Japanese blood. There are some essentials of culture in which all these tribes are very similar, and others in which they strikingly differ. The chief clothing of the men is the breech-cloth, and of the women is a short skirt. All are, or until quite recently have been, head-hunters. Spears are used by all the tribes, but the Ilongots use also the bow. The dialect of each tribe greatly differs from all others, and in some of the six tribes there are two or more dialects. Each tribe has a distinct war-shield, except the Ilongots among whom the shield is of the same pattern as among the western group of Negritos. The dwellings of each tribe also differ much.

The Ilongot synonymy is as follows: Ibilaos, Ilungut, Italones, and Lingotes. These people have a considerable amount of Negrito blood. Their culture shows similarity to Negrito culture in the use of the bow, and the same shield. The Ilongot men wear their hair long, but tied up at the back in a knot. Their front hair is kept from their eyes by a small overlying net worn for the purpose. They seldom tattoo their bodies, except in a meager way. Their economic culture is less advanced than that of any other of the six Malayan tribes, but is a considerable advance over Negrito culture. Their families are polygynous. They abandon their sick, and vacate a dwelling when a person dies therein, leaving it as a sepulcher for the dead. They are more warlike than the Negritos, but more cowardly than the other Malayan tribes. For the Ilongots, as for the Negritos, there is probably little hope of permanent cultural advancement.

The Kalinga synonymy follows: Aripanes, Aripas, Bayabonan, Calaguas, Calauas, Calingas, Catalanganes, Catalanges, Catatanganes, Dadayags, Dadayas, Gaddanes, Gamungan, Gamunang, Gamùnanganes, Irayas, Kalibugan, Nabayuganes, and Yogades. The Kalingas are, with the exception of the more advanced Tingians, the best clothed people of northern Luzon. Their clothing is of cloth, the men wearing beautiful jackets in ad-

dition to the breech-cloth, and the women waists in addition to their skirts. They tattoo to a limited extent. They often build their dwellings in trees, but their ground settlements have dwellings among the most substantial of all those of the several wild tribes in discussion. Their agriculture is a distinct advance on any so far reviewed. They grow irrigated rice in abundance, and also grow tobacco, cacao, and coffee for limited barter; sweet potatoes and taro are also grown. Dogs, chickens, and, in some villages cattle, carabaos, and horses are bred and are more or less domesticated, Secretary Worcester says. I have seen domesticated hogs in their villages. The men are bold warriors, and inveterate head-hunters, with elaborate head-hunting ceremonials — bands of 40 or 50 warriors go on their war expeditions. The men have more wives than any other of the tribes considered. They have a council for administering all village affairs, and by it all crimes are compounded. Though probably less industrious than the Ifugaos or Bontoc Igorots, the Kalingas are vastly more industrious than the Negritos and the Ilongots, and are "strong, cleanly, brave, and intelligent." It is believed that with the stopping of head-hunting they will in time form an important element of the civilized population.

The Ifugao synonymy is as follows: Alamit, Alimut, Altabanes, Altasanes, Ayangan, Bungananes, Bunnayan, Epocaos, Gilipanes, Ilabanes, Ifugados, Ifumangies, Ilamut, Ipucaos, Irayas, Mayoyaos, Panipuyes, Panuipuyes, Pungianes, Quianganes, and Silipanes. The chief distinguishing visible mark of the Ifugao man is his peculiar head-dress — the hair being cut "bowl-fashion" entirely around the head. Both men and women are elaborately tattooed. His enemies' skulls adorn the dwelling of the successful warrior. Their settlements at times number 5,000 or 6,000 souls. "Their agriculture is little short of wonderful, and no one who has seen their dry stone dams, their irrigating ditches running for miles along precipitous hillsides and even crossing the faces of cliffs, and their irrigated terraces extending for thousands of feet up the mountain sides, can fail to be impressed." They domesticate the dog, chicken, hog, and carabao. The women weave, and make pots; and the men fashion the most beautifully shaped and well-tempered spears and head-knives; and they are especially skilful in carving wood.

The Bontoc Igorots are known among themselves by the name Ipukao, and its phonetic variant Ifugao. The Bontoc men, in common with the Kalingas, bang the hair across the forehead, and tuck up the long back hair under a small basket-work pocket-hat. Both men and women tattoo. The men are brave and determined, and often take heads of their enemies

after open, formal challenge for fair fight; head-hunting is, however, rapidly being given up under American control. Their agriculture can be compared with no other than that of the Ifugaos. They domesticate the dog, hog, chicken, carabao, and a few horses. The boys are bright, and learn rapidly; the men are industrious and intelligent, and "all in all, there is much hope that he [the Bontoc Igorot] ultimately will make great progress in civilization and in material prosperity, but his intense conservatism will, at the outset, render such progress slow." The chief unique Bontoc cultural mark so far as known is its institution of trial marriage. Villages of several thousand people are divided into a number of geographical and political areas each with its governing council of old men in its council house, and each with its separate sleeping place for unmarried girls and others for the unmarried men and boys.

The Benguet-Lepanto Igorots have the following synonymy: Benguetanos, Igudut, Ygolotes, and Ygorot. The chief distinguishing features of the culture of these people are the habitual clothing of the entire body by the woman, the short-cut hair of the men and its accompanying headband, and the gold and copper mining and smelting. Contact with the Spaniard and the American in the vicinity of Baguio, the Insular summer capital, has made the men burden-bearers on the trail much more than are any other of the people presented. These people are more given to dog-eating than are any of the others, bringing home great numbers from the Christian Ilokanos on the coast. Though their agriculture is not nearly so well developed as is that of the Bontoc and Ifugao people, it is quite similar on a much smaller scale. They have exceeded all other tribes so far mentioned in the domestication of animals; besides those already mentioned as common among the other tribes, they have herds of horses and cattle often numbering 200 or more kept for breeding purposes. "All in all, the Benguet-Lepanto Igorots must be considered far more highly civilized than any other non-Christian northern Luzon tribes except the Tingians."

The Tingian synonymy follows: Apayaos, Apayos, Apoyaos, Banaos, Burics, Busaos, Ecnig, Ginan, Guinaanes, Guinanes, Itaneg, Itaveg, Itetapanes, Itneg, Quinaanes, Quinanes, Tinggianes, Tingues, and Ytatapanes. There is a civilized branch of the tribe which is called Tingians; and a wild branch called Apayaos. The latter are still fierce head-hunters whose culture compares well with that of their Kalinga and Bontoc neighbors — with both of whom in common they use the head-ax, each of the three tribes having a separate pattern. Of the civilized Tingians Mr Worcester says: "The Tingian type of face is very different from that of

any other northern Luzon tribe, and many of the men and women have peculiarly sweet expressions, thoroughly in keeping with the mildness and gentleness of their character." Both men and women wear the hair uncut — the men wearing head-bands of cloth, and the women of beads. The men commonly wear only the breech-cloth, though they usually possess trousers and shirts which may be worn on festival occasions. The women wear a unique ornament on both their forearms from the wrist to the elbow; it consists of successively close-placed armlets of strung beads. The civilized Tingians know their own ages, differing in this respect from all other people here presented, and they "have advanced further in civilization than have the members of any other non-Christian tribe of the Philippines. They are a most attractive people, cleanly in their personal habits, and of excellent disposition. They are peaceable and law-abiding to an astonishing degree. Crime is almost unknown among them. Their towns are well built and well kept. Their fields are often better tilled than are those of their [Christian] Ilokano neighbors. They save their money and some of them become quite wealthy. They are anxious to receive the benefits of civilization now that they may have them without being compelled to change their religious belief."

Such pictures as are shown in plates IX, LX, and LXI are of the greatest value in presenting clearly the cultural differences in the several tribes of people; they show, respectively, different typical methods of man's head-dress, different typical war weapons, and different typical war shields. Figure 3 of plate L and figure 2 of plate LXIII present two of the rarest photographs taken in the Philippine islands; they are, respectively, a Tingian fisherman throwing a casting-net, and a beheaded body of an Ifugao warrior.

Plate II, showing a full-length picture of a typical man of the Negrito, Ilongot, Kalinga, and Ifugao tribes, is unfortunately very misleading. As reproduced, the Ifugao man is only four-fifths as tall as the Negrito (shown as the tallest man on the page), whereas in reality the typical Negrito is only four-fifths as tall as the typical Ifugao or other pagan Malayan of northern Luzon. If definite measurements are not at hand to publish with such comparative illustrations, better scientific results will follow if pictures published for their scientific value are reproduced as near as possible in a natural scale.

Just as this review is completed a personal letter from Secretary Worcester reaches me which states he finished in 1906 a second expedition among the Apayaos, who reside to the eastward and probably northward

of their more cultured Tingian kinsmen; he hopes soon to publish a narrative account of his expeditions of 1905 and 1906 among that people. It will be the first authoritative modern account published of the Apayao people, and will be of great value to students of Philippine ethnology and primitive culture. After it is printed ethnologists will have had in hand since the middle of the year 1905 reliable data, even though it is comparatively scant, of all the known wild tribes of northern Luzon except the group of Negritos known to be in the extreme northeastern part. The only extensive area then left to be explored is the Sierra Madre, between and more or less parallel with the Rio Grande de Cagayan and the Pacific coast of northern Luzon (an area lying close to the coast and marked on the accompanying map as the eastern Negrito area). It is a matter of conjecture what wild people occupy those mountains, though it is probable that both Negritos and pagan Malayans will be found there in considerable numbers.

ALBERT ERNEST JENKS.

The Native Races of the British Empire. British Central Africa. By A. WERNER. London: Archibald Constable and Co., Ltd., 1906. 8°, xii, 294 pp., 32 pl., map.

A commendable enterprise, under the general editorship of Mr Northcote W. Thomas, is the publication of a series of convenient handbooks on the *Native Races of the British Empire*. These manuals aim to be at once up-to-date, accurate, and popular. Four volumes have so far appeared dealing with the native races of Australia, British Central Africa, Northern India, and British North America. The volumes are largely compilation, but the writers are, in each case, personally acquainted with the region and people considered.

Just now a deeper and more general interest exists relative to African peoples than at any preceding time. This interest is shown by the fact that three important books dealing with African tribes have appeared in England during the last few months — a probably unparalleled fact. A glance at the contents of the European anthropological journals shows a quite disproportionate space given to African articles. That these facts are due to a real and permanent interest in the population of the Dark Continent may be safely assumed. The volume of the *Native Races of the British Empire* series dealing with Central Africa is a handsome book, well-printed, and illustrated with thirty-two full-page reproductions and a distributional map. It is written by Miss A. Werner, who appears

to have been connected with a mission school among the Anyanja of the Upper Shiré region and to have come into contact with the Yao and some others of the neighboring tribes. Miss Werner does not seem to have been greatly interested in the people from an anthropological point of view, while she was with them, and plainly had no special preparation for investigation; but she was intelligently interested in what she saw and conscientiously kept a notebook, although she often missed the point of, or misunderstood, the customs with which she came into contact. She has largely overcome these disadvantages, through later reading and comparison, and is well qualified to do just what she here does — namely, to collect and organize the data given by others, incorporating with them her own observations and presenting the whole in a fairly complete, symmetrically developed, and attractive form. Her style is clear, simple, and direct. Should Miss Werner, with her present equipment, return to the Shiré highlands, she could give us one of the most important monographs yet written on African ethnography.

The tribes chiefly described are the Anyanja, Angoni, and Yao. Linguistically all three are Bantu and, while presenting some minor points of difference, they are on the whole quite similar in life and thought. Miss Werner first sketches the physical geography of the country and presents a general idea of the fauna and flora amid which the tribes live and upon which they depend. She then makes some remarks upon their ethnic classification and their physical characters. This somatological summary is not particularly satisfactory as it is made up from statements, by different authors, which are themselves rather indefinite. Even when careful and extensive measurement has been done among Central African tribes, it will be difficult to formulate accurate statements regarding race-types. Nowhere has there been greater movement, displacement, and mixture. Intertribal wars, the slave-trade, Arab and European pressure, have all operated through a long period of time to produce confusion. After this preliminary matter upon geography and race Miss Werner presents the subject of tribal marks and emphasizes the importance of keloids, ear- and lip-piercing, tooth-chipping, and hair-dressing. In her subsequent description of tribal life she, curiously, first considers religion and magic. It is so settled a practice among ethnographic writers to present this at or near the end of their discussion that we at once wondered what our author's reason for so marked a departure may be. We confess our inability to find it. Nor do we see why, if she chooses to introduce this subject early, she does not present her folklore with it. But, having presented the most abstruse and difficult phase of

human life and thought first, she turns to simple things — childhood and youth, daily life, funeral rites, industries, language and oral literature, folk stories, tribal organization, government, traditions, history. Much that is important, some that is new, is in her material. Miss Werner is sympathetic with the dark peoples and presents an attractive picture of their life and character. While her discussion is well balanced and evenly developed, it is not invidious to particularly praise her treatment of language and oral literature, games, riddles, songs, and music. The wit and wisdom of the African have been a favorite field for many, and books of saws and aphorisms, riddles and proverbs are not wanting. But new matter, or re-presentation of old, in this direction is always welcome. "If you are patient you will see the eyes of the snail," say the Anyanja. "Sleep has no favorites." "Lingering met with liers-in-wait." Such terse expressions are significant of tribal shrewdness. Not only at Likoma, where she met with it, but throughout black Africa, there are set riddle contests with forms like this: — "*A.* begins, 'A riddle.' The rest reply in chorus, 'Let it come.' *A.* 'I have built my house on the cliff.' All guess; if their guesses are wrong, *A.* repeats his riddle. If they still cannot guess right they say, 'We pay up oxen.' *A.* 'How many?' They give a number. If *A.* is satisfied, he will now explain his riddle— 'the ear' being the answer to the one given above. If any one guesses right, all clap their hands and another player asks a fresh riddle."

Miss Werner writes for a popular constituency, but her book contains good material for the student as well. She is comprehensible everywhere, which unfortunately is not true of all authors upon African subjects.

FREDERICK STARR.

At the Back of the Black Man's Mind or Notes on the Kingly Office in West Africa. R. E. DENNETT. London: Macmillan and Company, Ltd. New York: The Macmillan Company. 1906. 8°, xxii, 564 pp., ill.

Thus, no one can possibly understand Mr Dennett's *At the Back of the Black Man's Mind.* The more's the pity, because Mr Dennett no doubt has matter of the greatest importance, in gathering which he has spent much time and labor. He does not express even simple matters clearly. Thus in regard to the names and order of succession of the rulers of Luango, he says:

"Maniluemba, the present Maluango elect, about whom we shall have much to say, took the place of Maniprati, who was deposed by the people for having killed his own daughter for refusing to cohabit with him. Maniprati

had succeeded Mani Makawso, who was the Maluango elect, and Nganga nvumba, when the French first took possession of the country in 1883. The title nganga nvumba is a priestly one given to the Maluango elect upon his accession and one that he retains until the coronation ceremony completes the burial rites of the Ntawtela or deceased Maluango, when he becomes the crowned Maluango.

"Maniprati was the last crowned Maluango and the Zingana nvumba preceding him were Mani Makawso Masonga, Manimakawso Manawmbo, Manimakawso Matukila of Kondi, and Man'anawmbo, none of whom were crowned. Mani Yambi became Maluango, as did his predecessors, Manipuati of Xibanga and Muluango Tati of Kondi, who they say succeeded Maluango Njimbi.

"Maluango Prati is said to have died some fifty-five years ago, so that if this list of rulers be complete, eight of them filled in the time between 1603 and say 1860, giving them each an average reign of thirty-two years, and this appears to the writer too great an average, though some native princes reign for a very long time. He is inclined to think that either the list is incomplete, or that the Njimbi referred to by the natives is not the same as the one mentioned by Battell."

In the above passage is the order of nganga nvumba given direct or reversed? How much of the names given is title? How can Maniprati's predecessor have been Maluango elect in 1883, when Maniprati was dead in 1860? What really was the name of his predecessor? If Mr Dennett is unable to convey a clear idea with regard to a simple matter of fact, what can we expect when he discusses complicated mystical and religious ideas?

Not only is Mr Dennett incapable of clear statement; he has preconceived ideas and theories to which his facts must be fitted, no matter how much stretching or lopping will be necessary. Thus, the Bavili (to whom his discussion is chiefly devoted) have ten commandments relative to things forbidden. These are so stated that they exactly parallel the Hebrew decalogue. Naturally, the second Hebrew commandment can hardly be expected among a people who delight in graven images and likenesses. Ah well, that is the only one that is modified in form in the whole list, and it is made to apply to photographs and mirrors! This is ingenious, but somewhat painful. A considerable part of Mr Dennett's discussion is devoted to the Luango governmental organization and the court of the king. After this has been carefully brought into detailed relation with a complicated system of categories, ramifying into almost every conceivable phase of human thought and practice, we are told that it is precisely the same governmental form as exists at Benin. This does not

greatly surprise us. What does surprise is that this system recurs again detail for detail in the British Constitution! We should be willing to assume that Bavili philosophy, categories, and interrelations are exemplified in the Bavili government if Mr Dennett clearly demonstrated it (which he does not). But the British Constitution is *not* an exemplification of a developed British philosophy in which the number six is a fundamental conception, in which six categories are clearly recognized, and in which titles and duties are fixed by the relation of ideas of all classes to this fundamental conception. If the British ever had such a philosophy it has vanished, and that so long ago that a Constitution absolutely developed in detail upon it could not remain complete, perfect, and unchanged until now. Such a thing is inconceivable. Mr Dennett's comparison really raises two fears: (1) That Mr Dennett, from a study of the British Constitution, has worked out a scheme into which, consciously or unconsciously, he tries to fit African facts; (2) that his very working out of the Bavili and Benin Constitutions is largely fanciful.

Mr Dennett constantly introduces native words and expressions, to which he often gives elaborate and mystical, frequently far-fetched, interpretations. He has lived for years among these natives and no doubt has a practical knowledge of their language. No other white men in that region have had so good linguistic opportunity except the missionaries. Neither trader nor missionary often gains a large vocabulary. Usually, however, the missionary is much the better linguist of the two. From Mr Dennett's special interest and researches into native thought and practice we would be quite willing to assume that he knew the language more broadly than the missionaries, though many of these have been in the country for many years and no one would deny their competence. Certainly, men like Weeks, Phillips, and Bentley know the Fjort language well. We are entirely justified then in expecting Mr Dennett, when within the range of these men's work, to be in fair accord with them. As a matter of fact, it is almost impossible to find any agreement between Dennett's words and those in Mr Bentley's dictionary. Considering the vagueness and mysticism in Mr Dennett's English, this lack of accord renders us suspicious of our author's etymologies and interpretations.

We wish, however, to avoid the appearance of undervaluing Mr Dennett's book. It contains a large amount of valuable information, and a true student, already somewhat acquainted with barbaric thought in general and with African ethnography will find much that he can use,

but he will have to work to get at it. Most of the book is devoted to the Bavili, the inhabitants of Luango, occupying the west African coast about latitude 5° 11′ 30″. They are a part of the Fjort, Fioti, or Fiote, and in his earlier books — *Seven Years Among the Fjort* and *Notes on the Folklore of the Fjort* — Mr Dennett used that name. The alternate title of this book is *Notes on the Kingly Office in West Africa*, and considerable attention is given to Government and the Kingship, Law, etc. The Election, Coronation, and Court of the King are specially examined. The chapter on Law was drawn up in response to a "Questionnaire" sent out by the French authorities. Such questionnaires are no doubt useful and perhaps necessary, but, unless drawn up by one well acquainted with the local field to be investigated, lead to some strange results. The effect in Mr Dennett's case is good, as the questionnaire somewhat pens him in and keeps him in line. It is in his chapters on philosophy and religion that Mr Dennett is at once at his best and worst. He sharply distinguishes between *ndongoism* and *nkici-ism*. *Ndongoism* is bad, witchcraft; *nkici-ism* is "medicine," magic used for good ends or protective against witchcraft. The Bavili divide all men into two classes — *muntu nzambi* (man of god) and *muntu a ndongo* (man of black arts). The word *nzambi* means god in our sense of the word; it is the term commonly employed by the missionaries to translate God. Mr Dennett says *ndongo* means the bad spirit living in the stomach of witches. The ultimate thing is nzambi; everything can be reduced to his manifestations: from him proceed the passive and active energies, female and male, and from them come habit, custom, sequence, result — the child. Dualism and the notion of a trinity — female, male, and child — constantly present themselves under various forms and symbols. *Nkici-ism* as opposed to *ndongoism* is associated with the sacred grove and the kingly office. In another statement, he says — "above and beyond *ndongoism* is a religion connected with certain symbols in the form of sacred groves, sacred lands and rivers, sacred trees, sacred animals, omens, the seasons." This above and beyond religion is *nkici-ism*.

It will be observed that six sets of symbols are here mentioned. There are six titles of the king connecting him definitely with these. There are six departments of state. There are six kinds of souls. There are six seasons. The sacred groves fall into six groups of four each. That a number should be full of significance to a given people is not strange; there are plenty of examples of it elsewhere. There is no reason why six should not be significant and sacred. In fact it might easily be so along either one of two lines of thought. It might be, as among some

of our Pueblo Indians, directly associated with the cardinal points. Or, it might arise from the intentional doubling, easy among a people permeated with dualism, of the trinity already mentioned. In either case, we should find a clear connection with the viewpoint that gave it birth. Mr Dennett supplies no such connection. The Bavili seem to pay less attention to the cardinal points and categories related to them than we should expect; nor is there the attention given to the zenith and the nadir that the connection of the number six with the cardinal points would require. Nor do we see proof that the six is here a doubled three. The categories themselves suggest it, there being two sets of quite separated ideas in the list: water, earth, fire — motion, fruitfulness, life; this suggestion is not, however, well carried out elsewhere. A serious study of Mr Dennett's method and statement leads to some doubt as to the naturalness, the significance, and even the existence of some of his groupings into sixes. But there is much food for serious thought and study in his data regarding categories, sacred groves, and *nkici-ism*.

FREDERICK STARR.

The Lower Niger and its Tribes. By ARTHUR GLYN LEONARD. London: Macmillan and Company, Ltd. New York: The Macmillan Company. 1906. 8°, xxii, 564 pp.

We wish that we could speak words of unreserved praise for the third of the African books before us, Major Leonard's *Lower Niger and its Tribes*. But here we have two glaring faults: (1) The author lacks clearness in statement; (2) he aims to give an appearance of profound and technical knowledge to his argument when he would do better to seek the most simple expression of views. Major Leonard has long lived in the region studied, knows the people well, and has thought long and seriously upon his material. The discussion is almost confined to religious ideas and practices, as is shown by the division headings — Section I. Part I. — A geographical and traditional outline. Part II. — The Philosophy of the People as expressed in words, names, proverbs, and fables. Part III. — The Natural Religion of the various Tribes. Section II. — The Naturism of the Delta. Section III. — The Dualism of the Natives. Section IV. — Spirit-land and Spiritualism. Section V. — The Spiritualism of the Physical. Section VI. — Emblemism or the Embodiment of the Spirit. Section VII. — The Ceremonials and Practices of Naturism. Section VIII. — The Demonology of the People as practised in Witchcraft.

In the Niger delta dwell many small tribes differing from each other in language, life, and to some extent in religions, though presenting on

the whole a notable uniformity. Major Leonard reduces these many tribes to two chief and original groups — the Ibo and the Bini. Unlike Dennett's Bavili, who are Bantu in speech, these tribes are negroes. akin to those of the Sudan. Still there should be much in common in the religious thought of the Niger delta tribes and the Bavili, and Dennett and Leonard should mutually cast light on dark points. This they really do, and when we find them in accord, or easily harmonized, we are warranted in giving weight to their ideas. In Leonard we find no evidence for the vast importance attributed to categories or for the pervasiveness of six as a sacred number, asserted by Dennett. Yet Dennett claims to find the whole system as well defined at Benin as at Kabinda. It seems impossible for one who has gone as deeply into native thought and religion as Leonard, to overlook a series of ideas so important, fundamental, and pervasive, had they really existed. Here our confidence in Mr Dennett's observations is diminished by disagreement. Among his Bantu friends Mr Dennett finds the sacred grove to be of the utmost significance and importance, though he does not clearly show why it should be so. Leonard brings out clearly that the tree becomes the receptacle of a dead man's soul and hence is sacred. Here the agreement of the authors gives confidence to the belief that groves are truly and importantly sacred.

When Major Leonard is not clear, it is because he uses too many words, introduces unnecessary clauses, or employs technical or semi-technical terms inexactly; Dennett's obscurity is due to actual obscurity in thought or inability to supply words to keep up with his thought. Major Leonard divides his matter about equally between facts and theories. His theoretical suggestions provoke both thought and dissent. He recognizes, as Dennett does — and in fact all students of African religion seem to do — (*a*) a chief god, the creator, (*b*) dualism existing throughout nature, exhibiting itself among other ways in sex ideas and phallicism, and (*c*) the presence of spiritualism. For him the religion presents itself as an ancestor worship, which recognizes the father-ancestor of the family as the great object of practical worship and maternity as divine. All religious thought and practice center around this. Prayer, sacrifice, fetich-using, idol-making and worship, witchcraft, are all examined and explained with this fundamental conception in mind. For Major Leonard the sacred crocodile is a beast in whom an ancestral spirit is embodied; the idol, made by human hands and usually anthropomorphic, is a spirit's dwelling-place; a fetich (for him a natural, not an artificial object) has been selected as a resting-place by a human spirit. The choice to rest

in another human being, in a tree or other plant, or in an object, may be made and publicly expressed during the life-time of the friend or ancestor, Embodiment in human beings, in plants or in objects, is often desired and desirable. Embodiment in animals is not desired and is due usually to unsought and hostile influences. While thus, Major Leonard is plainly committed to Spencer's *ghost-theory* as distinguished from Tylor's *animism*, he finds room for *animism* (personalism, he perhaps would call it) but considers it subsequent to ancestor and linga cult. While his attitude in this matter is clear, and repeatedly stated, it seems as if his facts can be quite as well fitted with the belief that personalization was coincident with the birth of the idea of one's own separable soul and antecedent to the idea of an ancestral spirit or of embodiment of spirits, ancestral or otherwise, in new resting-places.

Of particular interest and abounding in suggestive ideas, new or stated in new form, are the discussions of burial and funeral customs, human sacrifice, significance of blood, cannibalism, transmigration, embodiment of all sorts, spirit possession, "medicine," twins, and witchcraft. The author makes much use of the term emblemism, which he considers to be the *totemism* of some authors. Both because of the importance of the question at issue and because the passage fairly represents the author's style and mode of argument, we present his own words:

"If the term totem, said to be of Chippeway origin, denotes an object, usually but not invariably an animal, between which and his tribe the savage believes that there exists a close kinship — as according to Dr. J. G. Frazer it does — then totemism expresses in one word the cult as it prevails among one and all of these Delta tribes. . . .

"But, however, if totemism implies that the savage in the kinship alluded to traces his descent from the totem in question, irrespective of the fact that it is an animal, vegetable, or material object, then totemism as it is now accepted, and the emblemism of the Delta are two separate or at least different features. For, as I have more than once explained, it is not to the emblem itself, i. e., to the actual animal or object, but to the ancestral spirit inside it — in other words, to the human father with whom the spirit has been associated — that the Delta natives trace their descent. Their belief is that these symbols were chosen by their ancestors as suitable and convenient objects to reside in, with a view to repose and adoration, or in accordance with the ruling jurisdiction, and that it is in consequence of this spirit-residence that the emblems are treated as sacred, and not by any means on their own account. . . . Speaking merely from general knowledge and a wide experience of Oriental and African nationalities, I have no hesitation in stating that, in my humble estimation, totemism, regardless of nationality or race, is nothing more

or less than emblemism pure and simple, as it now exists among the tribes of the Niger Delta."

While we regret the author's diffuseness — he might state all he has to say in one third the space he uses — and while some of his theoretical conclusions fail to appeal to us strongly, we consider the book one of the most serious contributions that has long been made to anthropology and the study of primitive religion.

FREDERICK STARR.

The Native Races of the British Empire. British North America. I. *The Far West, the Home of the Salish and Déné.* By C. HILL-TOUT. London: Archibald Constable and Company, Ltd., 1907. 8°, xiv, 263 pp., 33 pl., map.

The Native Races of the British Empire. Natives of Northern India. By W. CROOKE, B.A. London: Archibald Constable and Company, Ltd., 1907. 8°, xiv, 270 pp., 32 pl., map.

From the editor's brief preface to these volumes, by N. W. Thomas, we learn that "the present series is intended to supply in handy and readable form the needs of those who wish to learn something of the life of the uncivilized races of our empire," and that "unless otherwise stated, the contributors to the series will be anthropologists who have personal knowledge of the tribes of whom they write." References to authorities "will be dispensed with as unnecessary for the general reader," but, "for those who desire to follow up the subject a bibliography will be found at the end of each volume." Works produced under these conditions by competent men cannot fail to be valuable additions to the stock of ethnological literature, but they must be done in the best possible way, if they are to be thoroughly satisfactory.

The entire omission of references to authorities, even in a work of popular scope, is a doubtful procedure, especially when, as in the case of Mr Hill-Tout's volume, the "Bibliography" (less than a third of a page in extent) is so incomplete — a select list of the chief monographs of Father Morice and of Mr Hill-Tout himself, with some references to other authorities, besides Petitot and Teit, ought to have been given. It is only from a reference on page 38, in connection with the discussion of cranial deformation, that one would suspect that so distinguished an anthropologist as Dr Franz Boas had made extensive researches among the Salishan tribes. The lack of dates, also, where names of travelers and investigators are cited, is somewhat confusing.

In works of a popular character care should be taken not to perpetuate needlessly inaccurate or fanciful orthographies, or to increase the number of different spellings of a given term. There is thus no excuse for the spelling *pot-latch*, adopted generally throughout the book, with occasional changes to *potlatch* and *Potlatch*; and none also for adding, in *Kooteney* (p. 32 and elsewhere), to the variety of the distortions of that ethnic name already on record. There are a few statements of a kind that ought to be eliminated in another edition, such, for example, as the information, vouchsafed on page 134, that the nearest analogue of the peculiarly shaped Kutenai canoe is found "in Eastern Asia, among the *Yakut* tribes." Aside from these minor matters the book is well made for the purpose intended, and the illustrations (from photographs) are very good, while the index also is very satisfactory. In addition to two chapters of a general geographical and historical and ethnological nature, there are ten other sections dealing respectively with the following topics: Habitations, dress and personal adornment, food and cooking, basketry and bark vessels, implements of war and the chase, social organization, religious beliefs and practices, social customs, folk-tales and myths, from the cradle to the grave.

As to the vexed question of the Indian population past and present, Mr Hill-Tout has no hesitation in saying (p. 28): "My own investigations among this people (Salish tribes under British rule) conducted over a series of years, leaves no room for doubt in my mind that the present Salish population of approximately 12,000 does not represent nearly a fifth of the population of this stock at the time of Simon Fraser's visit to them." And, with respect to the Dené, he adopts Father Morice's opinion that the total number of Indians belonging to this family at the present time is "less than one-tenth of what it was when Mackenzie first passed through their country." The chief cause of this great mortality is thought to be alcoholism, with smallpox, syphilis, and pneumonia as the principal secondary causes. Of physical types the author recognizes, both among the Dené and the Salish, the "characteristic American type," and the "adventitious or so-called Mongoloid type," the coastal regions showing more of the latter than the interior. Among the borrowings from other tribes by the Salish is the canoe of the so-called "Amur type," the credit of originating which is given to the Kutenai (p. 134). The Salish furnish us with an excellent parallel for the English statement that it takes three generations to make a good lawn, for Mr Hill-Tout informs us (p. 140) that the final touches are put on the stone hammers by rubbing them with the naked hand, and "to give the

high polish some of them have taken two or three generations of 'rubbers,' and hence the great value set upon them by their owners" — they are often treasured as heirlooms. Perhaps some of the high polish of certain prehistoric European weapons and implements may have been achieved in similar fashion. Among the Dénè and the coastal (unlike the interior) Salish the tobacco-pipe does not figure in pre-trading days. Mr Hill-Tout rightly attributes to the custom of the "potlatch" in earlier, pre-trading days, a good and beneficial influence on the whole, "engendering, as it did, feelings of good-will and friendship between settlement and settlement and tribe and tribe and making war almost impossible between them" (p. 156). In speaking of the social organization of the Salish, the author observes, perhaps too inclusively, that "matriarchy has everywhere been superseded by patriarchy" (p. 158), this statement implying the previous existence everywhere of the former system. Although chapter IX is titled "Religious Beliefs and Practices," it begins with the remark: "Religion, in the ordinary meaning of the word, the North-West tribes had none" — the nearest approach to it being, in the author's opinion, found "among some of the interior Salish, who at times invoked the Spirit of the Dawn, one of the many 'mystery' spirits with which they peopled their universe." The narrowing of the term "religion" indicated here seems to the reviewer rather unnecessary. At page 174 we find the interesting statement: "Totemism, — using the word in the American sense, that is, as the doctrine of guardian spirits, — differs from shamanism mainly in the fact that it brings the individual into personal and direct relation with the spiri of things without the mediation of the medicine-man." In the folk-tales and myths recorded in this volume the chief figures are the raven and the sea gull, the coyote, the magpie, the diver, the black bear, the elk-maiden, the lynx, etc., and one of the stories tells of "the man who brought his wife from the land of the departed" — a sort of a primitive Orpheus. Other volumes of this series are to deal with the remainder of Canada.

Mr Crooke's study of the "Natives of Northern India" fares better in the way of bibliography (66 titles, pp. 263–265) and in references to authorities also. After brief descriptive and general ethnological chapters come fourteen others on: The tribes of the Northern hills; the tribes of the Southern hills; the castes of the Plains; the agricultural, commercial, and industrial castes of the Plains; the village and its industries: the criminal and vagrant; home life: the occupations of women; child-life:

games and amusements; the birth rites; the marriage rites; death rites; popular religions and beliefs; magic, shamanism, witchcraft. Northern India is of special interest to the ethnologist, for "there is perhaps no region in the world where the inhabitants live under more diverse conditions, and where they have been more directly influenced by their environment" (p. 12). The environment ranges from the desert of Rajputana to the borderland of Assam with 60 feet of rain during the year sometimes; and the peoples vary from the Juangs of Orissa, who have only quite recently given up the simple garb of Adam and Eve, to the Brahman philosophers of Benares. From the pessimism of the plains one finds escape among "really cheery, light-hearted people like the Oraons and Mundas of Chota Nagpur and the Gurkas of Nepal." In the Himalayan districts "the local politics depend upon the configuration of the country," and to the south, "the keen, austere air of the desert has strengthened and refined the character and physique of the people."

The great mass of the population of Northern India, according to Mr Crooke, consists of mixtures, in varying proportions, of one or more of three distinct physical types, which types now "remain distinct only on the very outskirts of Northern India — Aryans in the North and North-west Punjab, Dravidians in the secluded districts of the Central Provinces, Mongoloids in the hills fringing the valley of Assam." There is also "a bewildering variety of language and dialect," besides many forms of mongrel speech; and some of the more aboriginal tribes (e. g., the Bhils of Rajputana, in part, who speak a variety of Gujarati) have adopted Aryan languages.

The author cites with approval Risley's observation in regard to caste that "a man's social status varies in inverse ratio to the width of his nose," and favors the Babylonian theory of Rhys Davids, writing of "the letters of the old Akkadian script, which became the prototype of all the alphabets used in India, Burma, Siam, and Ceylon" (p. 29). Mr Crooke believes that the Mongolian element "accounts for the broad head of the Bengali, by which he is distinguished both from the Aryan and the Dravidian." As to the Aryan invasion of India, he does not look with much favor on the theory advanced (p. 34) that it took place not by way of the difficult Khyber and other northwestern passes, but rather by the southern route through Baluchistan, which, at the time, was a fertile land, that has since much deteriorated. The difficulties of the northern route, Mr Crooke thinks, have been exaggerated, for even to-day they "are largely used by caravans which include women and children." Caste, in the general view interpreted as the result of the clash of the

white and black races, could not, Mr Crooke believes, have originated in the Punjab, since "from the earliest times the valley of the Five Rivers must have been a land of white men."

The hill-country of Assam and its borderland are occupied by "groups of (Mongoloid) tribes whose customs and institutions are of the most archaic type" — Akas, Daflas, Miris, Abors, Mishmis, Nagas, Bhotiyas, etc. In part of this region head-hunting is but recently extinct, the "bachelors' hall" survives, and elaborate systems of tabu are in vogue. Only in the plateau of Chota Nagpur have the Dravidians of the southern hills been able to resist the influence of the Hindu missionary; elsewhere the contact of the Aryan has changed the jungle-folk in many ways. The Oraons, Kols, and Santals have been least affected, the last being especially distinguished by "their strong national feeling and their determination to preserve themselves from contamination by foreign races."

It is in the plains that the caste system is seen in full flourish, while "in the hill-country the tribe is gradually developing into the caste." In rejecting the commonly accepted idea of the antiquity of caste, Mr Crooke observes (p. 86): "Caste, as we now understand the term, had its origin in the Buddhist age, some six centuries before the Christian era." The more ancient distinctions of social ranking, connoting color and contrasting the fair-skinned Aryan with the black, broad-nosed Dravidian, "in no way corresponded with caste as we see it at present." Between the Brahman, Rajput, and Jat, "representing the aristocracy of birth and rank," and the Dom, "an object of abhorrence," come the great mass of the agricultural, commercial, and industrial classes and castes, every attempt to arrange which on a scale of exact social precedence is beset with enormous difficulties. To the fakirs of Hinduism are added also those of Islam, "as diverse in character and reputation."

In the hilly country, flanking the plains, is to be found the most primitive village-life, while the environment of the plains has caused many old and simple arrangements and devices to pass away. The most important of the existing village industries is weaving, for "sixty per cent. of the cloth used is produced at home" (p. 156). Interesting are the "robber" and the "criminal" tribes, such as the Sansi, Meos, etc., and the so called "Gipsy" tribes, "who differ little in appearance from these criminal groups" — the Nats, Kanjars, etc. The effect of European influence upon the old native industries is being felt more and more, and now many little things on sale at the village fairs are "made in Germany," or England. In the home activities the work of women plays a very large rôle — their labor being of three sorts — independent,

supplementary to that of their husbands, and common to both sexes. In the Punjab the social life of the village centers about the travelers' rest-house, with the women about the well and tank. The great gulf fixed between the European and the native women ("she enforces the same restrictions on his intercourse with her children") makes "the world of Indian child life generally mystery." Characteristic of Indian children are "precocity combined with a more imaginative view of life than that which our children ever reach," a certain old-fashionedness in thought and action, etc. In Hindu families of high rank, "the children give one the impression of being ridiculously coddled and pampered." The peasant boy's knowledge of animals, birds, and plants is very wide, out-door life stimulating him much in this respect. The evils of infant marriage, Mr Crooke thinks, "have probably been exaggerated" (p. 186), and when people speak of physical degeneration, it is sufficient to point to races like the Sikhs and Rajputs, among whom it prevails, and who certainly show no signs of decadence." In Northern India, as in some highly cultured regions of the globe elsewhere, "the bogie of the young bride is her mother-in-law." The value of the games and plays of children to the ethnologist is curiously illustrated by the fact that Mr J. Cockburn found "in the wild jungles of Mirzapur a magnificent specimen of a neolithic ring-stone which a young savage had mounted on a stick for use as a mace" (p. 187). The early marriage of girls interferes considerably with their development and enjoyment of plays and games. The innumerable obscure and tedious rites performed at birth, marriage, and death, find their explanation in the concepts of the "potentiality or atmosphere which inheres in and surrounds every personality" — the theory of tabu and its infectiousness.

In Mr Crooke's opinion, animism "forms the basis of the standard religion largely represented in modern Hinduism, and to a less degree in Mohammedanism, save among converts drawn from the lower strata of the people" (p. 244). Among the forest tribes of parts of Bengal "animism persists in its crudest form"; in the wilds of Chota Nagpur it is little affected by Hinduism, but "in the plains it gradually succumbs to the foreign influences which surround it." The last stage is the "monopolization of all religious duties by the Brahman." The great mass of the natives of Northern India are still to an immense extent "in bondage to the various modes of belief grouped together under the head of magic" (p. 246). Among the forest tribes "it is impossible to draw the line between magic and religion, and the practitioner, *baiga*, *pahan*, or *ojah*, is at once priest and medicine-man." Even in the higher grades

of Hinduism "the Brahman relies more upon the *mantra*, or spell, than upon the prayer." In Northern India white magic and black magic — the former employed for the promotion of the general interests of the community by such imitative or homeopathic devices as "rain-making," etc.; the latter employed by the individual to selfishly benefit himself, and "naturally regarded as an offence against the community at large" — are known and distinguished. Homeopathic, imitative, and contagious magic have each their dark and their light sides. Every village in the hill-country has its *dain*, or village-witch. In Northern India the methods of exorcising evil spirits are less elaborately developed than in the South.

It is to be hoped that the succeeding volumes of this series relating to other regions of India will be as interesting and as informing as this.

ALEXANDER F. CHAMBERLAIN.

Twenty-fourth Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution, 1902–1903. By W. H. HOLMES, Chief. Washington: Government Printing Office, 1907. xl, 846 pp., 21 pl., 1112 fig.

The Introduction to this Report indicates the scope of the researches carried on during the year in the field and at the offices of the Bureau: The investigations of Professor Holmes and Mr Fowke on the antiquity of man in Missouri, Kansas, etc., and their examinations of aboriginal flint-quarries, sites of stone implement manufacture, iron mines (Leslie, Mo.), etc.; Dr Fewkes' archeological investigations in Porto Rico and Santo Domingo; Mrs Stevenson's researches among the Zuñi; Mr Mooney's investigations among the Kiowa and Cheyenne; Dr Thomas' work on the linguistic families of Mexico and Central America; Mr Hewitt's studies in Iroquoian cosmogonic myths and ritual, also in Lutuamian (Klamath) sociology; Dr Swanton's work in Haida mythology, linguistics, and sociology; Dr Gatschet's linguistic investigations in the Peoria, Miami, and Wea dialects of the Algonquian stock; Dr Russell's investigations among the Pima Indians of Arizona, etc. Of these members and collaborators in the work of the Bureau, Dr Gatschet and Dr Russell have been since removed by death. The Introduction contains also a necrology of Major Powell, founder and director of the Bureau, who died September 23, 1902, and a notice of Miss Jessie E. Thomas, daughter of Dr Cyrus Thomas and librarian of the Bureau, who was accidentally drowned on January 14, 1903. Report of progress is also made on the *Handbook of American Indians*, the first volume of

which (A–M) has since been published under the editorship of Mr F. W. Hodge. Announcement is likewise made of a forthcoming *Linguistic Handbook* under the editorship of Dr Franz Boas, now honorary philologist to the Bureau. Other important linguistic investigations are those of Mr H. H. St Clair, 2d, among the Ute, Shoshoni, and Comanche.

The body of the Report is taken up with a monograph on "Games of the North American Indians," by Stewart Culin. This work is a worthy successor to the earlier comparative and synthetic studies of Indian customs, institutions, industries, etc., such as Mallery's "Sign Language" (1879–80) and "Picture Writing" (1888–89), and the monographs of Professor Holmes on various aspects of aboriginal art and industry. The collection, upon which Mr Culin has based his investigations, "has been confined to games in which implements are employed" (children's games without such accessories being excluded), and the present work "contains a classified and illustrated list of practically all the American Indian gaming implements in American and European museums, together with a more or less exhaustive summary of the entire literature of the subject." According to Mr Culin, among the American Indians "games of pure skill and calculation, such as chess, are entirely absent." Their games may be divided into two general classes: (I) *Games of chance*, of two sorts (one in which "implements of the nature of dice are thrown at random to determine a number or numbers, and the sum of the counts is kept by means of sticks, pebbles, etc., or upon an abacus or counting-board, or circuit"; and a second in which "one or more of the players guess in which of two or more places an odd or particularly marked lot is concealed, success or failure resulting in the gain or loss of counters," and (II) *Games of dexterity*, of which five kinds are enumerated, viz: (1) archery in various modifications, (2) a game of sliding javelins or darts upon the hard ground or ice, (3) a game of shooting at a moving target consisting of a netted wheel or a ring, (4) the game of ball in several highly specialized forms, (5) the racing games, more or less related to and complicated with the ball games. In addition, there is also "a sub-class related to the games of shooting at a moving target, of which it is a miniature and solitaire form, corresponding to the European game of cup and ball." The games are described and illustrated under each type and variety, the cataloguing being according to linguistic stocks and the tribes belonging to them. Besides the usual good indexes to the volume there is on pages 36–43 a very convenient tabular index to tribes and games. Many of the full-page illustrations, from photographs, are valuable from ethnological points of view other than those immediately concerned.

The longest section (pp. 44–225) devoted to any one type treats of dice games, "including all games in which number is determined by throwing, at random, objects which for convenience may be termed dice." "Dice games" are reported by Mr Culin as "existing among 130 tribes belonging to 30 linguistic stocks," and "from no one tribe does the game appear to have been absent." A high antiquity is suggested by the "wide distribution and range of variations in the dice games"—small bone dice have been found in prehistoric graves in southwestern United States, and a prehistoric stick-die in the cliff-ruins of Colorado, while pottery bowls from prehistoric Hopi graves in Arizona are decorated with representations of gaming sticks, with their peculiar markings. Among the numerous tribes referred to, the "dice" consist of such things as the following: sticks and pieces of wood, stones of various fruits, halves of walnut shells, acorn cups, claws of mountain-lion, teeth of beaver, woodchuck, etc., astragali of bison, deer, etc., phalanges of seals, corn grains, pieces of bone, ivory, etc., discs of stone, wood, pottery, etc., and, as a result of contact with whites, pieces of brass, china, etc. The receivers, holders, and shakers of the dice call into play the arts of pottery and basketry, while the dice themselves are often decorated, carved into human or animal forms, etc. "Stick games," although known to tribes of the Algonquian, Siouan, and Zuñian stocks, appear to flourish especially among the peoples of the Pacific Coast region, where alone one form is to be found. The "hand game" (so-called because the lots are held in the hand during the play) has a wide distribution, occurring among 81 tribes belonging to 28 different linguistic stocks, a fact partly accounted for, Mr Culin thinks, by reason of its being played "entirely by gesture, so the game could be carried on between individuals who had only the sign-language in common." To the photographs of Dr Dorsey, reproduced on pages 286 and 287, of Kutenai Indians playing the hand-game should be added the drawing of a similar scene by a Kutenai, published since Mr Culin's monograph was completed, by the writer of this notice, in the *American Anthropologist*. The "four-stick game" is limited to a few tribes of several stocks in Oregon-California. The "hidden-ball" or "moccasin-hiding" game ("a game of hiding something in one of several places, usually four, the opponents guessing where it is concealed") is reported from tribes of the Algonquian, Athapascan, Iroquoian, Keresan, Piman, Shoshonean, Siouan, Tanoan, Wakashan, Yuman, and Zuñian stocks. It is of considerable importance among the Pueblos, "the hidden-ball game being one of the five games sacrificed on the altar of the war-god in Zuñi." The "moc-

casin game," which in the East has little of ceremonial about it, is regarded by Mr Culin as "a direct modification of the hidden ball game, the Navaho game, with its nodule and striking stick, furnishing a connecting link." Of the games of dexterity the largest space (pages 561–714) is given to ball and its varieties (racket or lacrosse, shinny, double ball, ball race, foot-ball, hand-and-foot ball, tossed ball, foot-cast ball, ball juggling, hot ball), the next, pages 420–527, to "hoop and pole," with its "miniature and solitaire form," ring and pin (pages 527–561). "Hoop and pole," according to Mr Culin, "is remarkable for the wide diversity in the form of the implements employed, as well as in the method of play." It is also very widely distributed "throughout the entire continent north of Mexico." The netted hoop employed in this game is identical with the netted shield, Mr Culin believes, and "the game itself arose from the employment of this practical shield in connection with the arrow or javelin." A possible evolution of the wheel with its locomotive service seems to have been not entered upon by any North American Indian people. The game of "ring and pin" has also a wide distribution. It is analogous to the European game of cup and ball. Of the ball games racket is less widely distributed than shinny; its most notable development has been among tribes of the Algonquian, Iroquoian, and Muskhogean stocks. The ball race "appears to be confined to the Southwestern tribes," extending into Mexico and westward into California; it is well developed among the tribes of the Piman stock and some of the Pueblo Indians. The data concerning foot-ball proper are "extremely meager and unsatisfactory," though it seems to have existed among many tribes of different stocks. The "snow-snake" game naturally flourishes among such peoples as the Iroquois, whose winter environment has furnished the necessary stimulus. Among "minor amusements" Mr Culin mentions: Shuttlecock, tipcat, quoits, stone-throwing, shuffleboard, jackstraws, swing, stilts, tops, bull-roarer, buzz, popgun, bean-shooter, and cat's-cradle. The game of shuttlecock is known to the Salishan, Wakashan, and Zuñian stocks; tipcat to the Iroquoian, Siouan, and Zuñian; games akin to quoits to the Algonquian, Athapascan, Eskimoán, Keresan, Skittagetan, Wakashan, Yuman, and Zuñian stocks; throwing stones at a mark is reported from the Bannock of Idaho (Shoshonean) and the Tewa of Santa Clara (Tanoan); a game like shuffleboard, played on the ice by women, occurs among tribes of the Siouan stock; jackstraws is reported from the Eskimo and the Haida, swing from the Arapaho, Pawnee, and Dakota. The Wichita, Hopi, and Zuñi appear to be acquainted with stilts. The

top, which some authorities have imagined to be of recent European introduction, "is one of the most widely diffused of Indian children's playthings," and is doubtless pre-Columbian. We have the interesting information (p. 750) that "the bull-roarer, or whizzer, used ceremonially by the Hopi, Zuñi, Navaho, Apache, and other tribes, is employed in the same form as a child's toy, the latter being presumably borrowed from the implement used in religious rites." The buzz ("a whirling toy made of a flat piece of bone, pottery, or gourd shell, or of a heavy bone, with one or two cords on each side") appears to be "a common toy among Indian children." The popgun and the bean-shooter have probably been borrowed from the whites, although the question as to the origin of the former may be said to be still doubtful. Cat's-cradle, Mr Culin tells us, "is known to all tribes of whom direct inquiry has been made." According to the Zuñi, it is "the netted shield of the war gods," and the game was taught these by "their grandmother, the Spider." The Navaho also attribute it to "the Spider people." The Zuñi say again that "cat's-cradle was taught to the little boys, the Twin War-gods, by their mother, the Spider woman, for their amusement." At pages 781–87 a few unclassified games are discussed, and a brief appendix (pages 803–09) treats of "running games" proper, for purposes of comparison with the ball race. An interesting question in connection with the games of the North American Indians is the effect of European contact. A marked example of this is the adoption of base ball by the Navaho (ca. 1863, through the prisoners of the Bosque Redondo in New Mexico); the Thompson Indians of British Columbia seem also to have picked up a game of ball from the whites; and card playing — "the games played by the Indians with cards are easily recognizable as common Spanish and American games." Other games considered by Mr Culin to be of European introduction are several "played on boards or diagrams, like merils (games of skill and calculation, otherwise entirely lacking)," found among certain Algonquian tribes, tribes of the Pueblo stocks, etc. Mr Culin rightly rejects the opinion of those who would make racket (*la crosse*) a game of European origin, the evidence of its aboriginal invention being overwhelming. The conclusions arrived at of prime importance are:

1. That the games of the North American Indians may be classified in a small number of related groups.

2. That morphologically they are practically identical and universal among all the tribes.

3. That as they now exist, they are either instruments of rites or have descended from ceremonial observances of a religious character.

4. That their identity and unity are shared by the myth or myths with which they are associated.

5. That, while their common and secular object appears to be purely a manifestation of the desire for amusement or gain, they are performed also as religious ceremonies, as rites pleasing to the gods to secure their favor, or as processes of sympathetic magic to drive away sickness, avert other evil, or produce rain and the fertilization and reproduction of plants and animals, or other beneficial results.

6. That in part they agree in general and in particular with certain widespread ceremonial observances found on the other continents, which observances, in what appear to be their oldest and most primitive manifestations, are almost exclusively divinatory.

The ceremonial and religious aspects of a game are well illustrated in the ball-play of the Cherokee, the Zuñi dice game, the hoop-and-pole game of the Navaho, etc. The rôle of sex in Indian games is a matter of some interest and importance, certain games being played exclusively by one and a number of others by both sexes — the games relating to masculine ideas and activities are, however, in the majority. "Shinny," e. g., is particularly a woman's game, but among some tribes it is played by men alone, among some others by men and women alone, among others still by men and women together, and even in the cases of a few others by men against women, as among the Crows. "Double ball" among the Plains tribes is played exclusively by women, but in northern California by men.

The games of the North American Indians are indigenous, there being "no evidence that any of the games described (i. e. with the exception of the few noted elsewhere) were imported into America at any time either before or after the conquest." Indeed the most marked borrowings (lacrosse in the North, racket in the South, etc.) took place on the part of the whites. Mr Culin thinks he has discovered evidence of the radiation of games from a center in southwestern United States north, northeast, east, and probably also south. "There appears to be a progressive change from what appears to be the oldest forms of existing games from a center in the southwestern United States, along lines north, northeast, and east. Similar changes probably occurred along lines radiating from the same center southward into Mexico, but in the absence of sufficient data this conclusion cannot be verified" (p. 31). He is inclined to see in "the divine Twins (the Zuñian War-gods, e. g.) the miraculous offspring of the sun, who are the principal personages in many Indian mythologies," the "primal gamblers." Always contending

(east and west, night and day, winter and summer, morning and evening stars, etc.), "they are the original patrons of play, and their games are the games now played by men." The reviewer and all other students of the evolution of human culture-activities will eagerly await the volume promised by Mr Culin, in which he is to undertake "the task of attempting to untwine the tangled web in which the myth of the Twins is interwoven." While appreciating to the full the genius for research and the interpretative instinct of Mr Culin, the present writer feels that he has perhaps gone too far in his derivation of so many games from the use of the bow and arrow, the shield, and other implements of warfare. It may be that their warlike aspect, in not a few cases, is merely secondary and not really primal or primitive. The same remark might be made concerning the divinatory theory. Nevertheless, as Mr Culin is the authority on the subject, these criticisms may be *de trop*.

ALEXANDER F. CHAMBERLAIN.

Certain Mounds and Village Sites in Ohio. By WILLIAM C. MILLS, M. Sc., *Curator and Librarian, Ohio State Archæological and Historical Society; Curator of the Archæological Museum, Ohio State University.* Volume I. Columbus, Ohio: Press of Fred J. Heer, 1907.

This is a well printed, large octavo volume of excellent appearance and amply illustrated, and constitutes a valuable contribution to the archeology of Ohio. It comprises reports of four explorations, which appeared separately in the *Ohio Archæological and Historical Quarterly* (vols. X, XIII, XV, and XVI). These reports are separately paged and are as follows: Part I, Excavations of the Adena Mound; Part II, Explorations of the Gartner Mound and Village Site; Part III, Explorations of the Baum Village Site; Part IV, Explorations of the Edwin Harness Mound. All of these sites are situated in Ross county, Ohio, and in the vicinity of Chillicothe. This section was a favorite seat of mound-builders, and has been made classical by the excavations of Squier and Davis, Thomas, Fowke, Moorehead, and others.

Mr Mills' method of opening the mounds is systematic and deliberate, and the care exercised in uncovering the human remains and objects of art is exemplified in both text and illustrations. He is the most worthy coadjutor of Mr Clarence B. Moore in the field of mound exploration of the present period.

I. The Adena mound was the result of two distinct periods of building, the cubic contents being apparently more than doubled by the later additions. The burials in the original mound were confined to within a

few feet of the base line. One grave was below the original level of the ground. The bodies were wrapped or covered with bark or coarse fabric and were enclosed in rude sepulchers of logs laid one upon another, with sufficient space for the body, and covered by smaller logs laid across in various arrangements. In the second period the bodies were buried at different depths in the structure and apparently without wrappings or wooden casings. Perhaps the most remarkable feature disclosed in dissecting the mound were two pits containing large quantities of ashes and charred human remains as well as the bones of numerous animals and various objects of art. These were doubtless places of sacrifice, and portions of the ashes and calcined bones had been gathered and deposited over the bodies in adjoining graves. The art remains of both periods correspond so closely as to lead to the conclusion that the peoples represented were the same or of closely allied culture. The relics consist of stone implements and ornaments, coarse woven fabrics, etc., the most noteworthy specimen being a human effigy pipe, 8 inches in height, carved from indurated clay or clay-stone.

II. Mr Mills' studies of the Gartner mound and village site, situated on a bluff overlooking Scioto river, are of exceptional interest. The earliest period of occupancy is represented by a village site containing remains of domiciles, storage pits, numerous relics of handiwork, and much refuse of food consumption. Upon this site a burial mound had been erected, composed of three sections representing successive periods of building. The most remarkable feature of the earliest of these structures was a platform of tamped clay 2½ feet above the village level and 23 by 34 feet in horizontal extent. On this platform had been placed ashes of the cremated dead to the depth of from six inches to two and one-half feet, and in this were included, along with the charred human bones, the bones of quadrupeds and birds as well as many relics of handiwork. The explorer had the good fortune to discover also the crematory in which the bodies had been burned, and on this was a partially calcined skeleton surrounded by charcoal in such manner as to indicate that the ceremony had been abruptly terminated. In the remainder of the first section of the mound, as well as in the two succeeding sections, ordinary inhumation only had been practised. As the art remains found are identical throughout the village site and mound, it is not assumed that the first occupants were supplanted by a distinct people, but rather that, through some unknown cause, "the inhabitants suddenly left their village, either voluntarily or were driven away by an enemy, and sojourned for a time with a tribe having a different mode of disposing of their dead, and upon

their return they continued the practice of their neighbors." This, however, is only one of a number of conjectures that could be made. The illustrations of this section of the report are particularly numerous and instructive.

III. The Baum village site is situated in Ross county, near the borough of Bourneville, on a gravel terrace overlooking Paint creek, and covers an area of ten acres or more. Near the center of this area was originally a large square mound excavated in 1890 by the Bureau of American Ethnology and described in some detail in the Twelfth Annual Report of that Bureau. It had been further explored at a subsequent date under direction of Professor Moorehead. The site is adjoined by the extensive Baum earthworks described by Squier and Davis.

In this instance, as with the Gartner site, a single people and culture appear to be represented. Mr Mills' work extended over three seasons and brought to light 49 tipi sites, 125 burials, 230 storage pits, and the remains of 50 dogs, besides objects of handiwork and the remains of food consumption. Nearly two acres were examined "inch by inch" by the aid of the pick, spade, and small hand trowel. An interesting result of this minute and prolonged examination was the determination of the character of the dwellings of the people. One example of exceptional dimensions and permanency was "of oblong construction and measuring upwards of 21 feet in length by 12 feet in width inside the posts. The posts were large, as shown by the post-molds, and consisted of 21 set upright in the ground, the smallest being 5 inches in diameter and the largest 9¼ inches. On the inside 7 other posts similar in size to the outer ones were promiscuously placed, presumably for the support of the roof. The posts for the most part consisted of the trunks of small trees, with the bark attached, placed in the ground. The imprint of the bark was quite visible, but the trees all being young it would be impossible to identify from the bark the kind of trees used in the construction of the tepee. The posts were made the proper length by the use of fire, and no doubt the trees were felled by fire, for at the bottom of the post-molds charcoal was invariably found. The covering of the tepee evidently consisted of bark, grass or skins, as no indications were found pointing to the use of earth as a mud plaster in the construction of the sides or top. The fireplace was placed in the center of the tepee and was about 4 feet in diameter, 6 inches deep at the center and 3 inches deep at the edge, and had very much the appearance of having been plastered from time to time with successive layers of clay. The earth beneath the fireplace was burned a brick-red to the depth of 8 inches. The original floor of the tepee

had been made fairly smooth, but almost six inches of earth had little by little and from time to time been placed upon the floor. This earth had scattered through it implements and ornaments, both finished and unfinished, polished stones, broken pottery, hammer stones, a large stone mortar, and many animal bones, especially of the deer, raccoon, bear, and wild turkey." The ordinary tipi was not so large and was always circular in plan. The storage pits had been employed for the preservation of grain and seeds, beans, nuts, and other food supplies, and in many cases had been filled with refuse, the study of which furnished much interesting detail.

IV. — The Edwin Harness mound was included in an extensive group of works situated 8 miles south of Chillicothe and first described by Squier and Davis in *Ancient Monuments*. The several successive partial explorations of the mound illustrate the unfortunate results of the sporadic explorations so common in the investigations of these splendid works of antiquity, portions of the contents of this work being found in a dozen museums and private collections and a large percentage of the material being lost or without the accurate record essential to science.

After quoting from the reports of Putnam and Moorehead, Mr Mills proceeds with the details of his own work on the scarred and pitted portions that remain, the height of which was 16¾ feet, the greatest length 160 feet, and the width 85 feet. The structure was purely mortuary in character, "the site of the mound a charnel house until it was filled with graves, when the house was destroyed by fire and the mound erected as a monument to the dead."

The most striking fact brought out by the examination of this mound is that its contents represent two distinct cultures and doubtless two distinct tribes or families of people, the earlier culture being identical with that of the three sites first described and referred to as the Fort Ancient culture, and the latter to the remarkable Hopewell culture, represented best by the great collections of Moorehead from the mounds of the Hopewell group, also of Ross county, and by minor collections from localities distributed in a broad belt through Ohio and to the Northwest through Indiana, Illinois, and Wisconsin, extending into some of the neighboring states. The pottery forms a most characteristic feature of these remains and was included by the present writer in his work on the Pottery of the Eastern United States (*Twentieth Report, Bureau of American Ethnology*) in what, for convenience, he called the "Northwest Group."

The explorations of Mr Mills, ably presented in these four reports, demonstrate the great value to the student of the history of native American peoples and culture, of the evidence of the mounds and, more especially, that of the village sites, the minute examination of which furnishes data of an intimate and circumstantial kind that otherwise would remain forever beyond our reach.

W. H. HOLMES.

PERIODICAL LITERATURE

CONDUCTED BY DR ALEXANDER F. CHAMBERLAIN

[NOTE. — Authors, especially those whose articles appear in journals and other serials not entirely devoted to anthropology, will greatly aid this department of the *American Anthropologist* by sending directly to Dr A. F. Chamberlain, Clark University, Worcester, Massachusetts, U. S. A., reprints or copies of such studies as they may desire to have noticed in these pages. — EDITOR.]

GENERAL

Andree (R.) Frauenpoesie bei Naturvölkern. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 114–120.) Treats of women's songs (lullabies and game-songs for children, love-songs, songs of emotion, passion, sympathy, etc., songs of vengeance, sarcastic songs, songs of mourning, labor-songs), among primitive peoples in all parts of the globe. A. thinks that the poetry of woman rises with her social rank. The order of improvement is: Australians, Negroes, American Indians, Dravidians and Polynesians, — with the last two we find an approach to our own poetic feeling, etc.

Biasutti (R.) A propositi dei caratteri cranici di una razza primitiva. (A. per l'Antrop., Firenze, 1906, XXXVI, 165–173.) Discusses the cranial characters of the Bushmen, etc., as a primitive race, with special reference to the opinions of Trombetti, Shrubsall, Mantegazza, Fritsch, Stratz, etc. B. regards the Bushmen as "a distinct species of man"; Trombetti considers them as "Hamites degenerated in the desert"; Fritsch believes they were once distributed all over Africa, in which opinion B. agrees (and in southern Europe Bushmanoid elements are traceable). B. recognizes two "historical phases," viz, "a heterogeneous *fond* of species, cultures, languages in a state of advanced differentiation and with a minimum of reciprocal contacts," and "a passage from the heterogeneous to the homogeneous by means of spacial contacts and associations of new and old forms."

Blau (—) Die Ohrmuschel formbei Normalen, Geisteskranken und Verbrechern. (Korr.-Bl. d. D. Ges. f. Anthrop. München, 1906, XXXVII, 139–144.) Gives results and statistics of investigations of the form of the ear in 223 normal individuals (men 88, women 77, children 58), 255 mentally affected (men 100, women 155), and 343 male criminals. B. finds all deviations in form to be more common with lunatics and criminals; that heredity plays a large rôle, that a cumulation of abnormalities occurs in moral-criminals and lunatics hereditarily afflicted. The measurements indicate "an extraordinary asymmetry of both ears in the same individual."

Bonnier (P.) Le chant et les enfants. (Rev. Music., Paris, 1907, VII, 214–216.) Song for the child ought not to be merely the adults'. Song is primarily "esthetic gymnastics," and the child has its own esthetics.

Capitan (L.) Les pierres incisées préhistoriques. (R. de l'Éc. d'Anthr. de Paris, 1907, XVII, 32.) C. notes the prevalence on prehistoric monuments (of various periods) of incisures; also on rocks, etc. These he compares with similar marks on rocks, etc., made by primitive peoples of to-day (Sioux, New Caledonians), and attributes them to "a fetishistic custom widespread in prehistoric times and among many modern savage peoples."

Charpin (F.) La question religieuse. Enquête internationale. (Mercure de France, Paris, 1907, LXVI, 577–622; LXVII, 40–71, 212–249, 421–452, 625–556; LXVIII, 34–61.) A valuable and interesting symposium of 141 answers by distinguished men of science, art, literature, religion, etc., to the question: Are we in presence of a dissolution or an evolution of the religious idea and the religious sentiment? The English-speaking contributors are: O. Browning, C. Dilke, H. Ellis, Edmund Gosse, W J

McGee, G. Tyrrell, H. G. Wells, I. Zangwill.

Combarieu (J.) Conférence sur la musique et la magie. (Rev. Music., Paris, 1907, VII, 248–259.) Treats of the use of music as magic, — magic is "those devices by the help of which man believes himself able to impose his will upon nature." Magic rites are of two sorts, manual and oral, the latter being the older. *Chant* and *charm*, and other words, show the relation of song and magic. Prof. C. brings evidence to support his theory that "song, prototype of the arts of rhythm, had at first a magic function, was originally employed as a means of action, was a weapon of defense and offense, a sort of universal talisman." Oriental and other legends concerning the origin, etc., of music are cited. Primitive man, according to Prof. C. abolished the gulf between *say* and *do*, *speak* and *act:* language was something supernatural, divine. Then early man was all passions, emotions. Hence it was easy for music to appear as magic.

De Helguero (F.) Il valore delle differenze sessuali dal punto di vista biometrico. (A. d. Soc. Rom. di Antrop., 1907, XIII, 87–96.) Brief discussion of sexual differences from a biometrical point of view. Pages 94–96 are taken up with the determination of the parameters of a normal curve. The author seeks to show how biometric methods can apply in evolving the sexual value of characters (direct measurements, or indices).

Dinse (P.) Das neue Museum für Meereskunde in Berlin. (Z. d. Ges. f. Erdk. z. Berlin, 1906, 257–266.) Describes the maritime museum in Berlin, opened March 5, 1906. Interesting to the anthropologist are the sections relating to fishery, art and industry of marine products, etc.

Eröffnung (Die) des Rautenstrauch-Joest-Museums in Köln. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1907, XXXVIII, 6–10, 1 fg.) Describes buildings, contents, arrangement, etc., of new museum at Cologne opened on Nov. 12, 1906, with brief account of the proceedings.

Frassetti (F.) Solci suturali nel parietale umano. (A. d. Soc. Rom. d'Antrop., 1907, XIII, 39–43, 2 fgs.) Describes two cases of sutural sulci in the human parietal bone (both males from Bologna; the second skull has already been considered by Coraini) and other anomalies present. These partially bi-partite parietals are held to confirm F.'s views as to the causes of parietal partition.

—— Crani felsinei del V e IV secolo av. Cristo. (Ibid., 55–69.) First part of description (Sergi's method) with some measurements of 2 adult crania from the Felsinean necropolis discovered in the Giardino Margherita in 1889, by Prof. S. Brizio, and 10 adult and 2 children's skulls from the Certosa graves, belonging to the fifth and fourth centuries B. C. The variations in bones, sutures, etc., are noted. The situation of the skeletons when found is also described in each case. Three skulls had indices of 72; one, much deformed, ca. 91.

van Gennep (A.) Les nouveaux Musées de Berlin et le Trocadéro. (Mercure de France, Paris, 1907, LXVI, 436–440.) Outlines the proposals of Dr Bode, Director-General of the Royal Museums, in his *Report* to the Prussian Landtag on the question of the installation of the collections of the Royal Museum — Egyptological, Art of Asia Minor, Ancient German Art, Historical Portraits, Asiatic, Ethnographic, Prehistory and Folk-lore, in new Museums — the "Museumsinsel" and its additions. France is behind in museum dispositions.

Giuffrida-Ruggeri (V.) Caratteri sessuali di affinamento e altre quistioni antropologiche. (A. per l'Antrop., Firenze, 1906, XXXVI, 137–164.) G.-R. believes in the existence of "somatic characters of refinement," dependent not on stature, but, being more developed in woman, on sex; in certain tertiary sexual characters, e. g., length of hand, this "refinement" is marked. G.-R. also holds that "the medium man of a given ethnic group corresponds to the zoological differentiation reached *in toto* by that group, never by single individuals, who depart from it more or less, and eventually undergo secondary differentiations, due to manner of living, social condition, and the like, differentiations, which are sometimes esthetic, and sometimes not" Another view here sustained is that "the hierarchy of the human races is a reality, not a prejudice" (critique of Finot's *Le préjugé des races*, Paris, 1905), and there exists "a tendency to realize the maximum of morphological evolution represented by the white type, whether it be the slow evolution of milleniums, or the rapid results of intermixtures pro-

ducing it in the course of four or five generations."

—— La Convenzione internazionale di Monaco (Aprile, 1906) sulla unificazione delle misure antropologiche. (A. d. Congr. d. Nat. Ital., Milano, 1906 [1907], estr., 8 pp.) Résumés briefly international agreement at Monaco on anthropological measurements, with discussions of the value of physical measurements, craniometry, etc. In Italy it has been sought to substitute "morphological inspection" for cranial measurements.

—— La proporzioni del busto nei due sessi e il canone di Fritsch. (A. d. Soc. Rom. di Antrop., XIII, 1907, 45–54.) Discusses the canon of Fritsch and the proportions of the trunk in man and woman. This canon, according to G.-R, holds for males but not for females. There are sexual differences in the trocanteric, pubic, and ischiatic indices, increasing in this order. The relative superiority of woman seated is lost when she stands.

—— Nuove anomalie. (Ibid., 119–120, 2 fgs.) Notes on an anomalous ischiatic process and a bilateral canine spina.

—— La misurazione dell'orbita nelle scimmie e nell'uomo. (Ibid., 121–122.) The orbit of the anthropoids differs from that of man in that instead of the lacrimal fossa being intercalated in the orbitary margin (as with man), it is always behind it.

Gowland (W.) Copper and its alloys in prehistoric times. (J. Anthr. Inst., Lond., 1906, XXXVI, 11–38, 3 pl., 12 fgs.) Discusses the cause of the beginnings of metallurgy ("the campfire was the first furnace," and the production of metal from ore was at first accidental), the smelting of copper, the question of a Copper Age (only flat celts and simple knives or daggers could be made before the Bronze, so there was no distinct "Copper" Age), tin and other occasional constituents of the bronzes of the Bronze Age (lead, arsenic, antimony, zinc), methods of manufacture in primitive times (charcoal used; copper celts cast in open, bronze in closed molds), molds (clay and stone; open earliest; sand or loam very much later). Control experiments were made by the author.

Hellwig (A.) Umfrage über kriminellen Aberglauben. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 35–36.) An English version of this questionnaire on superstitions of criminals has appeared in the *Journal of American Folk-lore*, 1906, XIX, 91.

Hervé (G.) Mathias Duval. (R. de l'Éc. d'Anthr. de Paris, 1907, XVII, 69–74. portr.) Appreciative sketch of life and works of M. Duval (1844–1907), anthropologist, whose publications relate to embryology, anatomy, histology, teratology, etc. His lectures, 1887–1884, on the doctrine of evolution appeared as *Le Darwinisme*.

Lampert (—) "Wie wohnt der Mensch?" (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 34.) Résumé of an address on the dwellings of man. L. holds that protection and defence, not an instinctive building-sense, such as occurs with certain of the lower animals, led man to construct his dwellings. Primitive dwellings are of four types: Earth-dwellings (originally a mere hole or pit), tree and bush shelters (out of this developed the round hut), the tent and yurt, the long house (with walls).

Lignière (M. C.) Ancora sui derivati del secondo arco branchiale (cartilagine de Reichert) nell'uomo adulto, normali, pazzi, delinquenti. (A. per l'Antrop., Firenze, 1906, XXXVI, 113–135.) Gives results of investigations (details of measurements, descriptive notes) made on the bodies of 20 normal adults (males 8, females 12), 20 adult psychopaths (m. 12, f. 8), and 20 adult criminals (all males), besides 15 fetuses, newborn and very young infants, and observations on the styloid processes of 150 skulls. L. finds that the presence of an abnormal osseous point in the region in question is many times less rare in lunatics and criminals than in normal adults.

v. **Luschan** (F.) Die Konferenz von Monaco. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 53–62.) Gives report of committee on "the unification of anthropological measurements," with description of the 55 chief craniological measurements to be taken.

Manouvrier (L.) Le classement universitaire de l' Anthropologie. (R. de l'Éc. d'Anthr. de Paris, 1907, XVII, 74–96, 109–119.) First two parts of a discussion of the classification of anthropology in university studies, — at Oxford, Cambridge, Paris, etc., — and of the relations of anthropology with the general sciences, with the history of human produc-

tions, and with these arts, which, like medicine, have need of some portion of the science of man.

Mantegazza (P.) Un falso indirizzo dell' antropologia in Italia. (A. per l'Antrop., Firenze, 1906, XXXVI, 189–193.) M., for whom anthropology is "the natural history of man, studied in the individual and in the races," protests against certain tendencies of the science as revealed in the treatment of theses for the positions of professor, private-docent, etc., in Italian universities, towards limiting its scope on the one hand, and extending it unwisely on the other, — rejecting, e. g., an ethnographic essay, and admitting one on the effects of nervine foods, etc.

—— Il femminismo moderno dinanzi alla scienza. (Ibid, 229–232.) Criticises Dr A. Roster's *Femina Superior* (Firenze, 1906). M., who is "neither feminist nor anti-feminist," finds the book the work of "an advocate, not a man of science."

Papillault (G.) Entente internationale pour l'unification des mesures craniométriques et céphalométriques. (R. de l'Éc. d'Anthr. de Paris, 1907, XVII, 47–59, 9 fgs.) Gives results of deliberations of committee appointed at the International Congress of Prehistoric Anthropology and Archeology (Monaco, 1906), with descriptive list of measurements of skull and head (living) approved. See: *v. Luschan*.

Peet (S. D.) The distribution of precious metals. (Amer. Antiq., Chicago, 1906, XXVIII, 339-354, 18 fgs.) Treats of copper, bronze, silver, and gold implements, ornaments, etc., in the Old World and the New. The author believes that, in the "Metal Age," subdivisions of copper, bronze, silver, and gold can be recognized, "each metal being an index to a different stage of culture." The "golden age" is thus not the first but the last stage of primitive society.

abaud (É.) Origine et transformation de la notion de dégénéré. (R. de l'Éc. d'Anthr. de Paris, 1907, XVII, 37-46.) Résumés and compares the idea of "degeneracy" as expressed by Morel in his *Traité des dégénérescences* (Paris, 1857), Magnan et Legraine in their *Les dégénérés* (Paris, 1895), and Féré in his *La famille névropathique* (Paris, 1898). According to Morel degeneration is "la déviation maladive d'un type primitive" (i. e., the human race as a unity according to Genesis); he distinguished spontaneous and morbid variations, — in the case of the latter the organism remained sound. With Féré degeneration is not an arrest of development, but the result of such.

Ranke (J.) Wissenschaftlicher Jahresbericht. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 104–107.) Contains brief account of A. Voss (d. July 19, 1906) and his works and notices of new publications, in particular, those of Sarasin on Celebes, Ehrenreich on S. American myths, Kerchensteiner's and Levinstein's works on the evolution of drawing and the drawings of children, also Koch's monograph on the drawings of Brazilian Indians. Ranke agrees with Koch in esteeming these "primitives" not "half-animals" but "men like ourselves."

Rutot (A.) Déchets, rebuts, rejets, malfaçons, faux. (R. de l'Ec. d'Anthr. de Paris, 1907, XVII, 60-64.) Discusses these "five words which have been much abused in the literature of prehistory," — wastes, refuse, rejects, bad work, forgeries, and endeavors to settle their meaning.

Schlaginhaufen (O.) Ein canalis craniopharyngeus persistens an einem Menschenschädel und sein Vorkommen bei den Anthropoiden. (Anat. Anz., Jena, 1907, XXX, Abdr., pp. 1–8, 5 fgs.) Describes occurrence of this anomaly in the skull of a Semang woman of the Malay peninsula. This rare anomaly was found also in a Guanche skull by Sokolow, the only other case known of its appearance in non-European races. In complete and rudimentary form it occurs in 40.1 percent of the skulls of anthropoids examined by Schlaginhaufen, Maggi, and Waldeyer.

—— Ein Fall von Ossification des Ligamentum apicis dentis epistrophei beim Menschen und entsprechende Bildungen bei den Affen. (Morph. Jahrb, Lpzg., 1907, XXXVII, 120–128, 5 fgs.) Describes, with cranial measurements, the occurrence of this anomaly in the skull of a Pakpak Battak man from Rachatau. The so-called "third condyle" and variations occurred in 3 cases out of 100 Sumatran skulls, and in one out of 25 crania of orangs and 17 gorillas, though not once among 50 skulls of catarrhines, 12 *Hylobates*, and 18 chimpanzees.

—— Beschreibung und Handhabung von Rudolf Martins diagraphen-technischen

Apparaten. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1907, XXXVIII, 1–6, 4 fgs.) Description and illustration of Prof. Martin's craniophor and diagraph, as used on a Patagonian skull for reproducing the sagittal, frontal, and horizontal curves, etc.

Schwalbe (W.) Ueber alte und neue Phrenologie. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 91–99, 2 fgs.) Discusses the phrenological ideas of Gall, Moebius, etc. The temporal region of the skull (to which the author has devoted special attention) is considered; also the localization theories of Moebius (mathematical data) and Auerbach (musical talent). More scientific data are needed to settle these matters.

Sergi (S.) Sulla disposizione dei capelli intorno alla fronte. (A. d. Soc. Rom. di Antrop., 1907, XIII, 71–84, 1 pl., 1 fg.) Discusses the disposition of the hair of head in relation to the forehead. There are 10 chief arrangements of the flows of hair about the forehead. The frontal vortices may be convergent or divergent. The greater number of variations and the least common occur oftenest in idiots and deficients, along with other morphological anomalies. The results of other studies are résuméd, and a bibliography of 7 titles given.

Toldt (C.) Zur Frage der Kinnbildung. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 9–17, 4 fgs.) Argues against the theory of Walkoff which attributes the development of the human chin to two chief factors (the reduction in size of the teeth and lower jaw, and the formative activity of certain muscles, the *M. genioglossus*). T. considers that the chin is not a phylogenetic phenomenon, since the oldest known men e. g., Krapina, did not possess it, but is a peculiarity acquired during the existence of man as such, and then hereditarily transmitted.

Variot (G.) Sur la plagiocéphalie et la craniotabes. (Bull. Soc. d'Anthr. de Paris, 1906, V^e^ S., VII, 293–296.) True plagiocephaly with very apparent deformation is rare and V. has found it occurring with craniotabes in a dozen infants of from 3 to 9 months of age. This ossificatory trouble may be the cause of plagiocephaly, but hardly of all cases, as Dr Delisle pointed out in the discussion. Craniotabes is not a syphilitic lesion, but due to rachitism from malnutrition, etc.

Verworn (M.) Die Einteilung der steinzeitlichen Kulturstufen. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 19.) Advocates the addition of eolithic to the terms neolithic and paleolithic to designate the period during which man used stones as tools in their natural form without artificially modifying them in any way. According to V., the invention of the artificial modification of flints was "an extraordinary advance in human culture."

Weber (—) Psychische Epidemien im Völkerleben. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, 74–75.) Treats briefly of psychic epidemics (medieval dance-epidemics in Italy, Germany, etc., flagellants, children's crusades) and other religious, social, political, mystic movements of these and later times (Boulanger, Dreyfuss, Boxers, Africanders) among various peoples. The subject is considered at length in the author's essay with the same title published in 1906.

Yule (G. U.) On the influence of bias and of personal equation in statistics of ill-defined qualities. (J. Anthrop. Inst., Lond., 1906, XXXVI, 325–381, 2 curves, 30 tables.) Gives details of experiments with a pack of 256 cards, "each bearing two small scraps of photographic paper printed to different depths of color, the tints running from a slightly impure white through all shades of brown to a deep blackish brown." The individual was requested to go through the pack and name the tints according to one of these three schemes: "light," and "dark"; "light," "medium" and "dark"; "very light to light," "rather light," "medium," "rather dark," "dark to very dark," preferably the last. It appears that the single individual shows a considerable degree of inconsistency in the naming of the tints, and different observers attach very different meanings to the terms used in classification, differences of a statistically permanent kind, and that these inconsistencies and disagreements are the more frequent the greater the number of classes. Statistics of ill-defined qualities based on the pooled observations of a number of individuals give an inaccurate and misleading representation of the facts as regards pairs of samples of the given quality. A summary review is also given of certain published statistics relating to eye-color, hair-color, mental and moral qualities, etc.

Zaborowski (S.) Edouard Piette. (Bull. Soc. d'Anthr. de Paris, 1906, Ve s., VII, 260–264, 2 fgs.) Sketch of life and appreciation of scientific labors. The list of publications, compiled by himself not long before his death, lists of 57 titles, 1869–1900, but a number of other articles and monographs appeared subsequently. His fine study of art during the reindeer age was published in 1900.

EUROPE

Allen (G. H.) The development of boundary fortifications in Britain and Germany under the Roman Empire. (Rec. of Past, Wash., 1907, VI, 9-5, 50-57, 83–89, 11 fgs.) Treats of the boundary of the Roman empire in Germany (*limes*, forts, etc.), Roman boundary and fortifications in Britain (*murus* of northern England, Antonine's wall), the frontier forts, the cohort *castella* represented by the Saalburg, near Heddernheim, Germany.

Andree (R.) Die Zigeuner in Bayern. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 1–4.) Partly based on A. Dillmann's *Zigeunerbuch* (Munchen, 1905), an official publication, not intended for the laity. Treats briefly of physical type (often mixed), language (use of German now widespread), family-names (indicate varied origins; there are 265 Reinhardts and 116 Winters), religion (mostly Catholic, though largely a matter of indifference), social and family relations (concubinage common, also illegitimate children; analphabetism marked), occupations (begging, tinkering, etc.). A specimen description is given (p. 4) of one of the 3350 Bavarian gipsies.

Armstrong (H. H.) The autobiographic element in Latin literature and inscriptions. (Rec. of Past, Wash., 1907, VI, 111–116, 141–145, 5 fgs.) After indicating, by a résumé of the conclusions of Prof. West in his *Roman Autobiography* (1901) the extent to which the literary autobiography was employed, the author treats this element in the inscriptions prose and verse (religious dedications, dedicatory poems, *devotiones*, epitaphs, autobiographic statements of construction of public buildings, works, the performance of religious duties, etc.) and *graffiti*. In the inscriptions the autobiographic feeling is displayed "earlier and on a much wider field."

Atgier (M.) Présentation de fragments de poterie gauloise. (Bull. Soc. d'Anthr. de Paris, 1906, Ve s., VII, 225–226, 1 fg.) Note on two specimens of pre-Gallo-Roman pottery from Lancloître (Vienne) and from Gaillon (Normandy).

Bardon (L.) *et* **Bouysonnie** (A. *et* J.) Station préhistorique de la Coumbâ-del-Bouïtou, près Brive, Corrèze. (R. de l'Éc. d'Anthr. de Paris, 1907, XVII, 121–144, 13 fgs.) Résumés the results of the author's investigations of the prehistoric "station" discovered by them in the cave of Coumbâ-del-Bouïtou near Brive in the department of Corrèze: situation, stratigraphy (two distinct systems of deposits with different implements, etc.), implements, etc. (the stone tools indicate the Aurignacian or old reindeer epoch; 15,000 flints in all were found). This station has furnished no fauna, no work of art, no instruments of bone, ivory, or reindeer-horn (the soil does not preserve them).

—— Grattoir caréné et ses dérivés à la Coumbo-del-Bouïtou, Corrèze. (Ibid., 401–411, 63 fgs.) Detailed description and discussion of a more or less nuclei form type of scraper, found in abundance at the Coumbo del-Bouïtou, which, the authors, with M. Breuil, term *grattoir caréné*. The evolution of the implement from these scrapers is traced from the reindeer epoch down.

Bartels (P.) Demonstration einer menschlichen Wirbelsäule. Ein Beitrag zur Pathologie der jüngeren Steinzeit. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 144.) Note on the vertebral column of a neolithic skeleton from Heidelberg, exhibiting a pathological condition (kyphoscoliosis) due to tuberculosis of the vertebræ. P. considers it thus very probable that tuberculosis already existed in Germany in the later stone age.

Biasutte (R.) Glaciali e interglaciali nel quaternario europeo. (A. per l'Antrop., Firenze, 1906, XXXVI, 195–218.) Treats of the agreement between the Alpine glaciations and those of the North, and of that between the minor and major European glaciations; interglacials according to the researches of geologists in the Alps; paleontological and palethnological data; unity or plurality of the glacial phenomenon, etc. The ethnic movements of the Quaternary in general seem to have been very slow and limited. Rather than a flux and reflux of peoples

we have a very slow and gradual enrichment of anatomical and cultural types.

Birkner (—) Neue steinzeitliche Funde in Bayern. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 137–138.) Brief accounts of recent stone age finds in Bavaria, funnel-pits in the Spessart, "station" at Glonn, graves at Grossmehring near Ingolstadt and remains there discovered; also two finely worked flint knives or daggers from Obermühlhausen and Beilngries. The finds of graves and "stations" of the stone age in Bavaria are constantly increasing.

Capitan (L.) Les dernières découvertes paléolithiques à Capri. (R. de l'Éc. d' Anthr. de Paris, 1907, XVII, 104–105.) Résumés, from the account in the *Bollettino di Paletnologia Italiana*, the discoveries of paleolithic remains (bones of Quaternary animals associated with axes of the Chellean type) at Quisisona in southern Capri. The *arma heroum* of the ancient writers were probably these Chellean axes placed beside the *ossa gigantum* of the animals.

—— Les silex égyptiens de l'île Riou. (Ibid., 180.) Reports that the discovery of Egyptian flints made in 1905 on the islands of Riou, south of Marseilles by the Abbé Arnaud d'Agnel has to be given up, since it has been ascertained that the flints were "planted" for the purpose of deceiving the Abbé. Examination of the site by M. de Morgan in April, 1907, confirms this.

—— La pierre sculptée à figure humaine de Bragassargues, Gard. (Ibid., 65–67, 2 figs.) Describes a stone sculptured to represent the human form (eye and nose, but neither mouth nor chin are indicated; arms and hands, — the latter by 6 strie; ribs indicated by lines, etc.) plowed up in 1902 in a field at Bragassargues, in the canton of Quissac (Gard). It "is one of the first artistic manifestations of the neolithic period in the south of France." It resembles some of the "menhir-statues" of Hernet, etc.

Capitan (L.), **Breuil** (H.), *et* **Peyrony** (—) Les gravures de la Grotte des Eyzies. (Ibid., 429–441. 41 figs.) Describes the various engravings on bone and reindeer-horn and on stone — ornamented pebbles, schist plates, and carved plates of grès from the grotto of Eyzies. The engravings on stone of Eyzies resemble those of the Pyrenean caves. A remarkable willow-leaf flint arrowhead from Eyzies is also noticed.

Commont (M.) L'industrie des graviers supérieurs à Saint-Acheul. (Ibid., 14–32, 27 figs.) After describing the strata of gravels and clays at St. Acheul, the author treats of the various implements of the upper gravels — characteristic flints (simplified Acheulean), scrapers and typical arrowheads. All these are smaller and lighter than those of earlier epochs, indicating a real evolution and transformation, even more marked than that from the Chellean to the Acheulean.

Déchelette (—) Sur un vase peint provenant des sépultures de Saint-Hilaire-du-Riez. (Bull. Soc. d'Anthr. de Paris, 1906, V^e^ s., VII, 265-266, 1 fg.) Note on a painted vase (neck in form of female bust) of a rather rare sort dating from the third and fourth centuries A. D., Gallo-Roman, found in the graves of St-Hilaire-du-Riez.

Feyerabend (—) Der gegenwärtige Stand der vorgeschichtlichen Forschung in der Oberlausitz (Korr.-Bl.d. D. Ges. f. Anthrop., München, 1906, XXXVII, 88–91.) Résumés data concerning the prehistoric archeology of Upper Lusatia, stone, bronze, iron ages. The finds of the bronze are all individual or depot, and belong mostly to the later epochs. Interesting are a bronze statuette of Jupiter (Hadrian's time) from Siegersdorf and two Arabic silver finds (one from Meschwitz). The painted pottery has relations with the south.

Fishberg (M.) The Jews: a study of race and environment. (Pop. Sci., Mo., N. Y., 1906, 257–267, 441–450, 502–511; 1907, 33–47.) Interesting and valuable discussion, with statistics of natality (birth-rate, sex at birth, proportion of still-births, illegitimate births), marriage (marriage rate, consanguineous marriages, mixed marriages, fertility of mixed marriages, religion of off-spring of mixed marriages, dissolution of marriage), mortality (mortality rate, infant mortality, suicide), natural increase of population, among Jews of Europe chiefly. Dr F. concludes that "the birth, marriage and death rates of the Jews may be taken as an index of their social, economic, and intellectual conditions." Isolation by hostile legislation, ghetto life and prevention of intimate social intercourse with Christians, and the low, economic and intellectual standard resulting therefrom, bring it about that "their birth and marriage rates are high, their death rates, particularly the

infant mortality, correspondingly high, and practically no intermarriage with Christians takes place." Where, however, they enjoy equal civil liberty and social, economic, and intellectual advantages "their birth and marriage rates are so low, that even with phenomenally low death rates there is left a very small excess of births over deaths, in fact they show a striking retrogression and decadence." On the whole, "the native Jews in western Europe and America are being decimated by a low birth rate and absorbed by intermarriage with Christians."

Gaidoz (H.) De l'étude des traditions populaire ou folk-lore en France et à l'étranger. (Explor. Pyrén., Bagnères-de-Bigorre, 1907, 3e s., I, 174–193.) After a general discussion of *Folk-lore* and its significance, G. considers oral literature, and folk usages, customs and beliefs, to which may be added, perhaps "Christian folk-lore,"—the survival of heathen traditions, practices, etc. The beginnings of the study of folk-lore in France and the efforts of the investigator of the 19th century elsewhere in Europe and referred to.

Gutmann (K.) Der römische Ort Larga im Oberelsass. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 69–70.) Brief account of investigations in 1900 and since indicating that the site of Larga (in 200 A. D. a Roman station) was near the village of Friesen in Upper Alsace.

Gengler (J.) Der Kreuzschnabel als Hausarzt. Ein Beitrag zur Kenntnis des Vogelaberglaubens. (Globus, Brnschwg., 1907, XCI, 193–194.) Treats of the folk-lore of the cross-beak (*Loxia*), a bird, which is believed, in many parts of Germany to act as a sort of "house-physician," or draw to itself and remove from human beings many diseases, etc. Caged in the house, it protects against diseases, ill-luck, etc. Children are told that it drew the nails out of the cross on Calvary and was thus stained by the blood of Jesus. Its song is thought to have healing virtues. The legend of its never decaying may be due to the fact that, feeding so largely on conifer-seeds its body would naturally be preserved a long time.

Hassé (—) Chansons andalouses. (Mercure de France, Paris, 1907, LXVII, 263–273.) Treats, with French versions, of Andalusian songs: cradle and love songs, *requiebros*, *coplas*, castagnette songs of women, Holy Thursday songs, philosophic verses, epitaphs, *flamencos* and *tangos* of gipsy strain. From birth to death the *copla* cradles with its nostalgia the Andalusian.

Hénaux (F.) Découverte d'antiquités belgo-romaines à Vervoz, Clavier. (Bull. Inst. Arch. Liégeois, Liége, 1906, XXXVI, 95–123, 8 pl.) Describes the important discoveries of Belgo-Roman antiquities (objects of lead, bronze, wood, pottery, glass, clay, etc.) at Vervoz in 1905. The excavation and contents of two graves are treated in detail,—three others very briefly. The richness and diversity of the remains and objects found indicate a period of peace and opulence, *ca.* the third century A. D. To this article are appended the results of the chemical analysis by A. Jorissen of the contents of a bottle found in one of the graves at Vervoz—some oily substance. See *Renard* (L.).

Herrmann (—) Ueber die Armenier in Ungarn. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 120–122.) Sketches the history of the Armenian element (*ca.* 15000) in Hungary (the first great migrations from Moldavia whither they had retreated from Poland, then no longer a safe harbor, occurred in the 17th century). Those who came to Transylvania were of good character and ability, and they have since made their way in the professions, etc. While preserving anthropologic and ethnic marks and peculiarties of a notable sort, "the Armenians are the only racial element in Hungary that has adapted itself completely to the dominant stream of culture," etc., and they have therefore been very prominent in the national life. Important in connection with Armenian culture is the museum in Szamosujoar.

Hertlein (—) Ueber Jupitergigantensäulen. (Ibid., 79–80.) Brief account of the Jupiter-Giant columns, found only in the territory of the Middle Rhenish Teutons and the Treviri, except a few, sporadically in France. Dr H. considers them to be be Irmin columns, and thus characteristic of the Herminic Teutonic tribes of the Roman Rhine-lands.

Kaindl (R. F.) Neuere Arbeiten zur Völkerkunde, Völkerbeschreibung und Volks-kunde von Galizien, Russisch-Polen und der Ukraine. (Globus, Brnschwg., 1907, XCI, 62–65, 78–82.)

Reviews recent ethnological, ethnographic, and folk-lore studies relating to Salicia, Russian Poland, etc., published by the Ševčenko Society of Lemberg (on Huzulian folk-lore, Galician folk-industries and ceremonials, Cossack tales, Galician tales relating to beings with supernatural power, Ruthenian folk-songs, etc.), in the journal *Wisła* (vols. 18–19) and other folk-lore periodicals. Also in the publications of the Cracow Academy of Sciences, the journal *Lud*, etc., on a great variety of topics.

Kassner (C.) Bulgarien auf Grund eigener Reisen. (Z. d. Ges. f. Erdk. z. Berlin, 1906, 405–425, 466–481, 5 pl.) Gives results of five summers' (1900–1904) observations in Bulgaria, geographical, ethnological, etc. The women differ in type more than the men; the quiet of children at play is noticeable; illegitimate children are rare, by reason of abortion, not higher morals; to be married often means to be slave of wife and child, though in the country woman is often only a laborer and beast of burden; the town of Berkóvica is noted for its pottery, Vraca for the fine silk pro, duced by house-industry; in the country-thinly populated, S. and E. of Plevna. folk-songs abound (specimen on p. 415). Some of the cities, e. g., Sofia, are described at length. Prof. C. notes recent advances in education, the establishment of public libraries, progress in industries, manufactures, etc.

Kinnaman (J. O.) Archeological conditions in Italy. (Amer. Antiq., Chicago, 1907, XXIX, 22–25.) Résumés very briefly recent explorations, particularly in the Roman forum, etc.

Kirkoff (N.) Recherches anthropologiques sur la croissance des élèves de l'École Militaire de S. A. R. le Prince de Bulgarie, a Sofia. (Bull. Soc. d'Anthr. de Paris, 1906, V S., VII, 226–233.) Gives results of measurements (stature, chest-girth, length of leg, weight, lung capacity, strength of right hand, head-measurements of 4,874 boys between 11 and 20 years of age at the Royal Military School in Sofia, Bulgaria) undertaken to ascertain physical growth. The average annual increase in height was 55 mm.; chest-girth 36 mm.; leg 23 mm.; weight 4.7 kilos; strength of hand 4.7 for first four years (13–17). The head seems to have attained its principal growth before the age of 12. The maximum of increase for almost all measurements is at 14–15 years, the period immediately preceding puberty. Comparisons are made with measurements of similar character in other parts of Europe.

Koehl (—) Ueber stratigraphische Verhältnisse neolithischer Fundplätze bei Worms. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 123–125.) Gives results of recent investigations of the neolithic "stations" of Worms, with special reference to the chronology of South German "ribbon pottery." The three periods — Hinkelstein, Rössen, and Flomborn (spiral-meander) are all separately represented, no specimens from any two occurring in any one grave. The Rössen period is older than the Flomborn.

Layard (Nina F.) A winter's work on the Ipswich paleolithic site. (J. Anthrop. Inst., Lond., 1907, XXXVI, 233–236, 2 pl., 1 fg.) Describes investigations resulting in the finding of "as many as 54 definitely formed implements, besides several dozens of small flints showing signs of work, though of rougher construction." The author thinks they are scrapers and skinning-tools.

Lewis (A. L.) Deneholes or underground chambers. (Amer. Antiq., Chicago, 1906, XXVIII, 255.) Treats of the chambers cut in chalk on the banks of the Thames, etc., thought by some to be "chalk mines" — more likely, however, the secret grain store-houses of the Britons, mention of which is made by the Romans.

Lissauer (A.) Dritter Bericht über den Fortschritt der prähistorischen Typenkarten. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 103.) Brief account of the map of distribution of certain axes, of which seven types (intermediary type, Italian type of the terramaras, Swiss lake-dwelling type, Danubian type of Austro-Hungary, twibill, Hallstatt axe) are indicated.

Marquand (A.) The dome of SS. Sergius and Bacchus at Constantinople. (Rec. of Past, Wash., 1906, V, 355–362, 5 fgs.) Treats of the construction and form of this ancient building, which has lost much of its old character through Turkish restoration, "but our knowledge of it has suffered even more through misrepresentations by historians of architecture."

Mehlis (C.) Das römische Grenzwehrsystem in der Nordschweiz. (Globus, Brnschwg., 1907, XCI, 159–160, map.)

Résumés recent studies of Heierli, Burkart, etc., concerning the Roman boundary-protection system in northern Switzerland. The chief points noted are the Roman finds in Constance, the Berlingen tower in Thurgau, the castellum Burg at Stein, the watch-towers between Stein and Zurzach, the castellum Burg at Zurzach, towers between Zurzach and Baselaugst, the castella of Basel and Kaiseraugst, towers in Hard and the castellum Basilia. There is need for further investigation on the German side of the Rhine especially.

Meisener (—) Germanische Tempelruinen auf Island. (Korr.-Bl. d. D Ges. f. Anthrop., München, 1906, XXXVII, 17–19.) Brief account of the *hoftotter*, or temple ruins in Iceland (e. g., at Lund, Horgdalur, etc.), investigated by Vigfussen (1882), Olsen and Brunn (1902). A thoroughgoing study of all alleged ruins of this sort is desirable. The heathen period in Iceland lasted from 874 to 1000 A. D., and in 965 there were 39 chief temples for which taxes were levied.

Pier (G. C.) Pelasgian relics found near Lake Trasimene. (Am. Antiq., Chicago, 1907, XXIX, 21–22.) Notes on arrowheads, spears, etc., found on the lake-shore and "thunder-stones" for sale in the market-places of Cortona and Perugia.

Ranke (J.) Feurböcke und Bratspiesse aus prähistorischer Zeit in Bayern. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXVII, 129–133, 2 fgs.) Treats of prehistoric andirons and roasting-spits from Bavaria – one of the former and two of the latter, from the collection (2 andirons and 5 spits, found by Dr Thenn in 1901 in a Hallstatt grave at Beilngries in 1901) belonging to the State in Munich. The frequency of andirons as votive gifts in Etruscan and other ancient Italian graves suggests Italian influence here in Bavaria, during this period (late Hallstatt).

Regnault (F.) Empreintes de mains humaines dans la grotte de Gargas, Hautes Pyrénées. (Bull. Soc. d'Anthr. de Paris, 1906, V^e^ s., VII, 331–332, 1 fg.) Describes briefly the imprints of "red hands" in the Gargas grotto. Chemical analysis shows the substance used to be oxide of iron, used also by primitive man for coloring flints, bone, arrowheads, etc.

Reinecke (P.) Prähistorische Varia. XI. Kultsymbole aus dem europäisch-prähistorischen Kreise. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 41–43, 62–63.) Treats of the double-axe as a religious symbol, the horns, another Mycenæan symbol, finding an analogue in the "moon idols" of the Swiss lake dwellers, etc.

Renard (L.) A propos de deux urnes cinéraire en plomb trouvées dans des sépultures belgo-romaines à Vervoz, Clavier. (Bull. Inst. Arch. Liégeois Liége, 1906, XXXVI, 186–192, 1 pl., 1 fg.) Describes two lead burial-urns (Belgo-Roman age) found at Vervoz and discusses the distribution of such objects in Gaul, the Rhine country, Britain, etc. These urns exhibit a great variety of types, the oldest being in the shape of *ampullæ*. The most common type is cylindrical. See: *Hénaux* (F.).

—— Rapport sur les recherches et les fouilles exécutées en 1906 par l'Institut archéologique liégeois. (Ibid., 271–288, 4 fgs.) Résumés investigations of 1906: Belgo-Roman cemeteries at Limont and Bihain and tumulus at Soheit-Tinlot; Frankish burial-places, etc., at Huy, Bors-Borsu, Montfort, Clavier, Java; Belgo-Roman remains at Hermaille-sous Huy, Vervoz, etc.

Schmidt (—) Beurteilung der Oberlausitzer Schlackenwälle auf Grund der jüngsten Forschungen. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 133–136.) Résumés the latest data and opinions concerning the Upper Lusatian scoria mounds, based on the author's own investigations. The dross in the pre-Slavonic mounds on Mt Lobau date from ca. 1500–1000 B. C.; in the rest of the mounds (Slavonic) ca. 6th cent. A. D. The sites were probably fortified settlements or dwelling-places. As to the process employed S. differs with Virchow. These mounds are not of the same sort as the vitrified burgs of Scotland.

Seger (—) Einige Ostdeutsche Bronzetypen. (Ibid., 125–128, 10 fgs.) Treats of bronze needles of two types, bracelets of three sorts, double spiral fibulæ, a bronze hanging vessel found in Güstrow in 1803, etc.

Sergi (G.) Crani antichi della Sardegna. (A. d. Soc. Rom. di Antrop., 1907, XIII, 13–22.) Gives, with details of measurements, results of examination of 64 ancient Sardinian skulls from the tombs of the *domus de janas* near Al-

ghero, of which 53 are Eurafrican and 10 Eurasiatic; 27 ellipsoid, 15 sphenoid, 9 pentagonoid. The cephalic index of the Eurafrican skulls ranges from 65.3 to 80.5, of the Eurasiatic from 81 to 86.2. The average cranial capacity is for males 1490.4 cc., for females 1308 cc., — the capacity is thus not small. S. concludes that the population of Sardinia in the neolithic period showed about the same mixture as continental Italy and central Europe.

Servais (J.) Notice sur la station préhistorique du bois de Nomont, commune d'Esneux. (Bull. Inst. Arch. Liégeois, Liége, 1906, XXXVI, 87-94, 1 pl., 1 fg.) Brief account of a prehistoric site (paleolithic-neolithic), the two strata of which represent two different peoples or "cultures," the numerous implements, etc., found, including many flints, knives, scrapers, polished axes, etc.

Stock (—) Die Langwälle (Dreigraben) in der preussischen Oberlausitz. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 99-102, 4 fgs.) Brief account of the long dikes and ditches of Prussian Upper Lausatia. S. thinks these remains, dating from ca. 11-12th century, were for defensive purposes, and are analogous to such greater works as the *Limes germanicus*, the *Limes normanicus*, and the wall of Hadrian.

Verneau (R.) La race de Spy ou de Néanderthal. (R. de l'Éc. d'Anthr. de Paris, 1906, XVI, 388-400.) Treats of the discovery of the human remains of Spy and Neandertal and the physical characters of the race represented. V. holds that the men of Spy and Neandertal "were specimens of an old race living in the epoch called by G. de Mortillet the Mousterian," and that, moreover, "the type has survived in our own day in a group of Australian aborigines near Adelaide." Atavistic reappearances of the type are recorded from various parts of Europe in all ages. The man of Spy was nearer to the Negro than to the anthropoids in respect of several characteristics, in which the men of Malarnaud and La Naulette were closer to the latter. In fact, the man of Spy was a real human being and a biped. One of the links between the man of Spy and the ancestral stock of the anthropomorphic apes is the *Pithecanthropus* of Dubois.

Verworn (M.) Anthropologische Reisenotizen aus Portugal. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 76-77.) Discusses briefly the much disputed find of flints at Ota, near the Tagus, the prehistoric remains in the Museums of Lisbon, Belem, etc. Prof. V. considers that there is no proof of the existence of Tertiary man in the valley of the Tagus.

Walther (—) Skizzen aus dem wendischen Volksleben am Beginn des 20. Jahrhunderts. (Ibid., 112-114.) Notes that the Wends are sons of the same soil on which they have dwelt for 200-300 years, the home and family name can be often traced back unbroken for this period. The house and the woman are the preservers of speech, tradition, ancient customs, etc. Of the 500 folk-songs recorded, the majority are still current among the folk. So, too, the proverbs, of which Wehle, in 1902, had a collection of 9,125. Many traces of primitive religion are also still present (bread is "God's bread," corn "God's corn," etc.).

Weber (F.) Das Verhalten der Hochacker und Hügelgraber zueinander im südlichen Bayern und ihr Altersunterschied. (Ibid., 21-29, 38-43, 2 fgs.) First two sections of a discussion of the relations to one another of the *Hochacker* and the hill-graves of southern Bavaria and their ages. W. considers that the evidence indicates that the *Hochacker* are more recent than the hill-graves, and do not, as do the latter, go back to the Hallstatt age and the bronze period.

Wright (G. F.) The troglodyte dwellings of Bakhtchi-Sarai. (Rec. of Past, Wash., 1907, VI, 13-20, 4 fgs.) Describes visit early in October, 1905, to the crypts of Katchikalén, the Tchoufout-Kalé ("Jewish fortress"), the Tepé-Kermen (hill-castle), etc., in the Karaite region of the Crimea. Some of these crypts are very old.

Zaborowski (S.) Patries protogermanique et protaryenne. Réfutation des opinions de MM. Kossinna et Penka. (Bull. Soc. d'Anthr. de Paris, 1906, Ve S., VII, 277-289.) Argues against the theories of Penka and Kossinna as to the home of the primitive Teutons and Aryans, located by them in Scandinavia or Germany. Z. discusses the evidence afforded by deluge-legends, words for *sea*, *eel*, *serpent*, *salmon*, *beech*, *yew*, etc.

—— Le blé en Asie et en Europe et le culte du pain. (R. de l'Éc. d'Anthr. de Paris, 1906, XVI, 359-369.) Combats

the opinion of S. Reinach that the wheat-plant, like the oak, was native to Europe, and known there (whether cultivated or not) at the reindeer epoch, while its indigenous character is also proved by survivals of a "wheat" and "bread" cult. According to Z. the cultivation of wheat is not ancient in Europe (the prehistoric cereal there was barley); wheat and bread are very ancient in Egypt, likewise the cult connected therewith (leaven, etc.). Mesopotamia, Z. thinks, may well have been the original home of the wheat plant.

—— Communauté de langue de la Germanie des Romains, l'écriture runique: son origine, les plus anciens monuments runiques: Goths, Germains, Anglo-Saxons, Scandinaves. Le Gothique. (Ibid., XVII, 1907, 1–13.) Z. holds that Wimmer has proved conclusively the Latin origin of the runic characters; they sprang up possibly in s. w. Germany in the end of the second century at the latest; their magic use may be compared to that of the Mohammedan negroes, etc., of the Sahara. In the Baltic n. w. and in Germany from the stone age on everything was Aryan, — no trace of the pre-Aryan language in the Teutonic tongues. At the Roman epoch there existed in Germany, as a result of the conquest of the country by the Teutons, a unity of customs, religion, language contemporaneously *Urnordisch*, *Urgotisch*, *Urdeutsch*. The Goths had no part in the formation of German nationality.

AFRICA

Avelot (—) Le jeu des godets. Un jeu africain à combinaisons mathématiques. (Bull. Soc. d'Anthr. de Paris, 1906, V^e^ s., VII, 267–271.) Describes a sort of game of dice played with fruit-seeds, nuts, little green fruits, etc., widespread in Africa. It is the *mangala* of the Nubians, and possibly, like that work, of Arab origin ultimately. The rules of the game are given as played by the Senegal Negroes, the Dahomeans, the Nago, and those of the Gaboon.

Balfour (H.) Note upon an implement of a paleolithic type from the Victoria Falls, Zambesi. (J. Anthr. Inst., Lond., 1906, XXXVI, 170–171, 1 pl.) Describes a chalcedony implement ("thoroughly paleolithic in type, resembling completely a type of flint implements well-known from the River-Drift gravels of Western Europe and England") found among the coarse stones of the road on the left bank immediately above the Falls in September, 1905, by the author. See *Lamplugh* (G. W.).

Bridgman (F. B.) The new native in South Africa. (So. Wkmn., Hampton, Va, 1906, XXXV, 385–391, 5 fgs.) Discusses the circumstances which have led to the industrial, intellectual, religious, and social improvement of the Zulus. Besides the "new native" there are the "raw Kafirs" with their barbarism, and the half-civilized non-Christians.

Byroff (K.) Ueber das Land Punt, das Weihrauchland der alten Ægypter. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 82–83.) Discusses the mention of Punt in the ancient Egyptian inscriptions and the location of this "land of incense." Dr D. identified Punt with the horn of East Africa, holding that the *Qemi* of the inscriptions is neither more nor less than the word *gum* (*Gummi*), still surviving in modern language; "Punt is Opone and lives yet in the name of Cape Guardafui."

Clark (M.) Hand spinning and weaving among the Boers. (Ibid., 529–534, 4 fgs.) Treats of Miss Hobhouse's project for the establishment of home-industries, the work of the girls' industrial school, established at Philippolis in 1905, etc.

Cunnington (W. A.) String-figures and tricks from Central Africa. (J. Anthr. Inst., Lond., 1906, XXXVI, 121–131, 1 pl., 6 fgs.) Describes 2 Yao, 8 Ulungu (fishing-net, grass hut, wooden spoon, swimming on back, bed, bird, star, etc.), one Afipa (fishing-net), two Wajiji, 3 Manengu (moon, etc.), one Ubwari and one Waganda (locust) string figures and tricks observed by the author among Central African tribes. No. 5 of the collection coincides in result with a Cherokee figure, and the trick in No. 14 is known from North America and Torres Sts. See *Parkinson* (J.), *Haddon* (A. C.).

Curtis (C. D.) Roman North Africa. (Rec. of Past, Wash., 1907, VI, 67–76, 6 fgs.) Treats of the ruins of Dongga (temple, theater), a typical Roman city, Tebessa (Theveste) with its arch of Caracalla, Khremissa with its forum ruins (arch, etc.), Tirngad, the "African Pompeii" (forum, triumphal arch), Lambere (triumphal arch), etc.

van Gennep (A.) Un system nègre de

classification, sa portée linguistique. (Rev. des Idées, Paris, 1907, extr., pp. 12.) Résumés and discusses the Negro system of classification, elaborated by the Bavili of the French Congo, and set forth in R. E. Dennett's book, *At the Back of the Black Man's Mind* (London, 1906; see review in this number). It is, according to Dennett, "a form of higher religion superposed on *ndongoism*, fetichism with a dynamic basis."

Haddon (A. C.) String figures from South Africa. (J. Anthr. Inst., Lond., 1906, XXXVI, 142–9, 4 fgs.) Describes 3 Marotse (gorge of Zambesi, canoe, bird), 2 Batoka (fish-trap, *amadande*), 3 Portuguese East African (fighting lions, bird, *ambra*), and one from Natal (Zulu), with comparative notes, etc. See *Cunnington* (W.), *Parkinson* (J.).

Hamy (E. T.) Les cent quarante nègres de M. D'Avaux à Munster 1644. (Bull. Soc. d'Anthr. de Paris, 1906, V^e^ s., VII, 271–275.) Note on the "140 negroes" said to have formed part of the suite of the French ambassador at Münster in 1644, according to a letter of his agent Saint-Romain. Dr F. de Macedo holds that there is a negro element (due to the Portuguese maritime voyages) in Algarva, Alemtejo, etc., in Portugal. M. d'Écherac called attention to the existence of mulattoes in the village of Bonny-sur-Loire, descendants of a negro from the Island of Bourbon.

Harper (C. H.) Notes on the totemism of the Gold Coast. The families of the Gold Coast. (J. Anthrop. Inst., Lond., 1906, XXXVI, 178–185.) Treats of Abusua (families), table of totems, respect shown to totems, title (the animal is called *nana*, grandfather), origin-legends, transformation (imperfect funeral rites causes dead men to turn leopard), marriage laws (not strictly enforced now on the coast), funeral customs distinctive marks (absent, also no initiatory rites, special dances, etc.), common property (families have common burial grounds), omens, ancestor worship (the dead known as *asamaufu* are sacrificed to every year).

van Hieu (A.) Replies to the questionnaire. Totemism of the Gold Coast. (Ibid., 185-8.) Brief replies to 29 questions relating to tribal subdivisions, totem animals and ceremonies connected therewith, marriage and sex relations, childlore, treatment of totem-animal, worship of dead, sacrifices, etc. A few notes by a Negro are appended. See *Harper* (C. H.).

Huguet (J.) Origines et migrations des tribus Berbères et particulièrement des Béni-Mzab. (R. de l'Éc. d' Anthr. de Paris, 1906, XVI, 377–387.) Treats of the origin and migrations of the Berber tribes; references to and discussion of the views of Ibn Khaldun (and de Slane's commentaries), Tauxier, Mercier, Masqueray, En Nasri, P. Mesnage, etc. H. concludes that the first inhabitants of the Mzab were the *Musubei* or *Muzubei* (modern *Beni Mzab*), who were largely of Egyptian origin; they penetrated the Maghrib in the fifth century and ended by establishing themselves in the valley of the Oued Mzab.

Hutter (*Hptm.*) Bamum. (Globus, Brnschwg., 1907, XCI, 1–6, 26–32, 44–47, 18 fgs.) Describes visit in 1905 to Bamum, a Negro city and realm in the Cameroons, its government, houses and architecture, "palaces," villages, graves, arts and industries (weaving, bronze-work, etc.), fetishes, poison ordeal, etc. The Bamum people closely resemble the Bali, but belong to the "Tikai" or Taia stock.

Johnston (H.) *and* **Lyon** (—) The Black Republic, Liberia. (Nat. Geog. Mag., Wash., 1907, XVIII, 334–343, 4 pl., 4 fgs.) Notes on population, progress, character of natives, based on reports by authors. See also H. Johnston's *Liberia* (2 vols.). The illustrations are very good.

Kaiser (A.) Die wirtschaftliche Entwickelung der Ugandabahn-Länder. (Globus, Brnschwg., 1907, XCI, 53–57, 69–73, 85–93, 101–108, 21 fgs.) Contains notes on the natives of the countries along the Ugand railroad, their industries, etc.: the Wakamba, Kikuyu, Masai (nomadic), Wakuafi, Wakawirondo, Kabrasch, Sotiko, etc. Also treats of European settlers and Asiatic immigrants.

Kissell (Mary L.) African basketry weaves. (Science, N. Y., 1907, N. S., XXV, 828.) Notes on a collection of Barotse and Bechuana basketry, presenting "all the typical weaves known in America," including the California *ti* — the first reporting of the last from Africa. It is noteworthy that a primitive people like the Barotse should possess "practically all the typical weaves known to the world."

v. Kleist (*Oblt.*) Die Oase Bilma.

(Globus, Brnschwg., 1907, XCI, 65–66.) Notes the composite character of the population — Tibbu and several varieties of Tuareg. Marabout influence also.

Lamplugh (G. W.) Notes on the occurrence of stone implements in the valley of the Zambesi around Victoria Falls. (J. Anthr. Inst., Lond., 1906, XXXVI, 159–169, 1 pl., 3 fgs.) Treats of physiographical conditions, general distribution and character of implements, implementiferous sites, etc. Author leans to the opinion that "most of the implements were left in their present position when the Zambesi flowed in its higher valley for some distance below the present Falls." See *Balfour* (H.).

Leblond (M.-A.) Moeurs de l'Océan Indien. (Mercure de France, Paris, 1907, LXVIII, 209–220.) Treats of the ceremony of circumcision (the greatest festival) and its accompanying dances, etc.; the making of "blood-brothers"; love, domestic and family life; oratory, etc., among the natives of Madagascar.

Mochi (A.) Dati craniologici sui Sandé. (A. per l'Antrop., Firenze, 1906, XXXVI, 175–187, 2 pl.) Gives details of measurements, with some descriptive notes of 6 Niam-Niam (Mangbattu) skulls in Florence Museum and of 8 others (studied by Hartmann and Shrubsall); also of one Mbandiga, 3 Babucùr, one Bissaaga, and one Mabodu skull (all from Hartmann). The average cephalic index of all is 72.8. Evidences of racial mixture are present, including a Bushmanoid element, Eurafrican, and Negro-Nilotic.

Myers (C. S.) Contributions to Egyptian anthropology. III. The anthropometry of the modern Mahommedans. IV. The comparison of the Mahommedans with the Copts and with the "mixed" groups. (J. Anthrop. Inst., Lond., 1906, XXXVI, 237–271, 12 tables, 38 curves.) Gives results of studies of head and nose measurements; cephalic, upper facial, nasal and gnathic indices; color of skin, hair, and eyes; character of chin, lips, shape of occiput, lobe of ear, etc., of 1000 Egyptians, including 42 Copts and 70 "mixed." The mean value of the cephalic index, mean length, breadth, and auricular height of head, average color of hair, shape of head, face and ear, degree of prominence of chin, appear to be constant in the various provinces of Egypt, while from north to south there is an increase in the nasal index and a darkening of eye and skin color and increase in the frequency of spiral and crisp hair and of broad noses. The Copts have fairer eyes and skin, straighter hair, thinner lips, and lower nasal index than the Moslems. The "mixed" group is darker than the Moslems, with a tendency to more spiral hair, broader noses and thicker lips. The variability of the Copts, unmixed Moslems, and "mixed" Moslems, does not differ appreciably.

Neue französische Forschungen in der westlichen Sahara. (Globus, Brnschwg., 1907, XCI, 93–95.) Describes visit of Lieut. Cortier to Taodeni and its celebrated salt-mines — earlier (even prehistoric) salt-mines existed at Taghasa, five days' journey n. w. of Taodeni.

Parkinson (J.) Yôruba string figures. (J. Anthr. Inst., Lond., 1906, XXXVI, 132–141, 17 fgs.) Describes 16 Yôruba (from pagan natives) string figures: calabash net, saddle, net dance-mask, *fufu* stick, bat, birds in a corn-field, moving figure, parrot-cage, pig-sack, caterpillar, wolf's mouth, rams with horns interlocked, face-mark of town of Owu, a bird, train of dress of queen, white man's camp bed (a quite recent invention). See *Haddon* (A. C.), *Cunnington* (W. A.).

—— Note on the Asaba people (Ibos) of the Niger. (Ibid., 312–324, 2 pl.) Treats of religious beliefs ("Great Spirit," chief and subordinate spirits of man; personal god of good luck obtained by individual on wedding and owning a house; sacrifices; re-birth of spirit in child), origin-legend, chiefs, marriage, names, shrines and medicine houses, cicatrization (elaborate on face and body), face-pigments, color-terms (paucity of terms not due to lack of appreciation of color), public ceremonies and feasts (*iwagi* and *ikwensu*, two annual festivals, connected by an intermediate one, the *ubor*), dances (*eighu olo*, before yam-planting), poison and other ordeals, pottery, measurement of time, language (numerals, notes on grammar, sentences). The Asaba are an important section of the Ibos, whose language has been little studied, and "no complete dictionary exists."

Petrie (W. M. F.) Migrations. (J. Anthrop. Inst., Lond., 1906, XXXVI, 189–232, 11 pl.) Full text of article of which an abstract was previously noticed in the *American Anthropologist*.

Scherer (J.) Eine Schädelstätte im Boabab. (Globus, Brnschwg., 1907, XCI, 15–16, 1 fg.) Brief account of a "grave" in the hollow of a gigantic bread-fruit-tree in the wilderness of central Senegal, containing half a dozen skulls with other human remains, probably of "sorcerers," the custom being to cast the bodies of such into hollow trees. These boababs are sometimes used as cattle shelters. Two of the skulls were very brachycephalous and orthognathous, belonging probably to the "Mediterranean race."

Sheane (J. H. W.) Some aspects of the Awemba religion and superstitious observances. (J. Anthr. Inst., Lond., 1906, XXXVI, 150–158.) Treats briefly of the *milungu* or guardian spirits, the *mulenga* or rinderpest god (albinos are said to be his daughters by the women of the country devastated), the *mipashi* or ancestor-spirits, reincarnation and "possessed women" (with souls of dead chiefs), the *vibanda* or evil spirits (these thwart the benevolent *mipashi*), images, charms, the *lilamfia* (a fetish used in a war-time as a divining-horn), amulets, totems, the hierarchy (king, *m'gaaga* or "wise men," opposed to whom are the *mlozi* or wizards and sorcerers), instances of superstitious observances (child-birth, puberty-initiation of girls, divination for sexual purposes, ordeals, etc.), funeral ceremonies (of king, chiefs, common people). The Awemba are a primitive people of the Tanganyika plateau.

Spiess (C.) Das Gehöft des Gottes Zakadza in Nogokpo. (Globus, Brnschwg., 1907, XCI, 6–8, 1 fg.) Brief account of the seat of the god Zakadza of the Yehve, much feared and to whom many sacrifices are made. He has many names and numerous tabus. His priests are also judges.

Torday (E.) *and* **Joyce** (T. A.) Notes on the ethnography of the Ba-Yaka. (J. Anthr. Inst., Lond., 1906, XXXVI, 39–59, 2 pl.) Treats of ornaments and clothing (scarification and tattooing rare), food (dogs not eaten, cannibalism abhorred; tobacco, but no hemp smoking), agriculture (anti-thief fetishes), habitations, crafts (palm-cloth weaving by men, pottery by women; metallurgy learned from the Ba-Mbala, smelting unknown), trade and property (shell-currency), government and social organization (absolute chief, child belongs to village of maternal uncle, marriage by purchase, child-birth, initiation of boys by old woman and girls by old man both past age of fertility; slavery universal), psychology (children precocious, have feeble memory and are not good at arithmetic), amusements (music, gambling), morality and justice (every crime, except murder, a personal offense, latter tribal), poison ordeal, war, sickness, death, burial, religion (soul, malign spirits; chief is principal magician), sexual relations, folk-lore (English text of legend of monkey and falling trees, with music of chorus), language (vocabulary pages 54–58). The Ba-Yaka are a Bantu people of the Congo Free State.

—— Notes on the ethnography of the Ba-Huana. (Ibid., 272–301, 3 pl.) Treats of ethnic relationship with Ba-Teke and Ba-Mbala, physical characters, psychology (superior to whites in general observation, faculty of hearing especially), ornament and dress (tattooing proper not practised; ornaments not worn in ears, nose, lips), food (chiefly manioc and maize; food boiled except insects, which are fried), cannibalism (practised by men only), hunting and fishing, domestic animals (goats, cats, long-legged fowl, pig, red-haired dog used for hunting), agriculture (clearing done by men; rest left to women), habitations (huts of two types; unmarried men have each their own hut), crafts (pottery by women only; children begin work at early age), navigation and swimming (dog-fashion; dive well), trade and property (shell-money; great traders), government (chief and council of all free adult males), social organization (diagram of kinship; children belong to family of mother; slave-system somewhat complicated), amusements (no gambling; dances simply for amusement; also *danse du ventre;* good ear for music, — drums, harps, *tsimbi* flute); morality and justice (sexual morality absent; poison ordeal; arbitration), war (chief instigators are women), sickness (charms used), death and burial, religion (theory of body, soul, and "double"; fetishes common) time and the elements (lightning a cat-like animal; rainbow big snake); language (vocabulary pp. 292–297).

Weiss (M.) Land und Leute von Mpororo. (Globus, Brnschwg., 1907, XCI, 153–159, 165–171, 11 fgs.) Third and fourth sections treating of the Wahima women, their clothing, ornament, etc.;

language (Wahima took over language of aborigines); physical characteristics; cattle-culture (intimate relations of Wahima and their cattle); villages and village-life; Wahima clothing and ornament, weapons, marriage (average two wives, except chiefs), the two "queens," or high-priestesses of the spirit Niawingi, who rules the people through them, — the Niawingi-cult is spreading also to Ankole.

Winter (Julia F.) Social customs and political conditions of the Mandau. (So. Wkmn., Hampton, Va., 1906, XXXV, 656–665, 6 fgs.) Decribes visit to kraal of Pezulu, his wives, etc., and their occupations. Notes on family life (woman is property), polygamy (children sold to old men), slavery, English policy, relations of blacks and whites, — English text of a Zulu lament.

Work (M. R.) Some parallelisms in the development of Africans and other races. (Ibid., 614–621; 1907, XXXVI, 37–43, 105–111, 166–175.) The "parallelisms" cited relate to language (drum and symbolic languages, rude telegraphy among Duallas), sex (language influenced by segregation of sexes, secret societies), family life (respect for old age often marked), economics (myth of origin of loom; smelting of iron probably indigenous in Africa), education (secret societies are schools, as in mediæval Europe), politics (feudalism, caste, etc.), law and justice, art, music and musical instruments (drum, flute, violin, lute "music box"; *marimba*, possibly the origin of the piano; orchestras, recitatives, minstrels, pantomime, dramatic narratives, etc.), religion (creation-legends, spirit-lore, agnosticism, priesthood, witch-maidens, myth and folk-lore, treatment of the dead, other-world ideas), etc.

Wright (G. F.) Light from geology upon the crossing of the Red Sea by the Children of Israel. (Rec. of Past, Wash., 1906, V, 295–302, 6 fgs.) Argues that the story is "history, and not the product of mythological fancy or legendary accretion."

ASIA

Bonifacy (—) Les groupes ethniques du bassin de la rivière Claire, Haut-Tonkin et Chine Méridionale. (Bull. Soc. d'Anthr. de Paris, 1906, VI^e S., VII, 297–330, 21 plates.) A valuable article with numerous excellent illustrations of ethnic types. Treats of people belonging to the Thai (Thô, Heu, Nong, Giây, Trung Cha), La-Qua, Lao, La-ti; Man or Yao (Man, Quan-côc, Cao-lan, Quan-trang, Lan-tien, Siao-pan, Ta-pan); Pa-teng (Pa-teng, Nong-ê); Méo; Lolo (Mnong, black Lolos, white Lolos, Pu-la, Cho-ô) groups of stocks. The Lolo group B. affines with the Burman-Tibetan languages, the Man with the Chinese. In the discussion Deniker compares the ethnic diversity of this region to that of the Caucasus. Notes on the physical characters of the various peoples, average statures and cephalic indices being given for several groups. The most brachycephalic (83.9) are the La-qua or Pen-ti Lolo, the least (78.4) the Man or Yao. The La-qua (1.604) are also the tallest, and the "black Lolos" (1.556) the shortest. The Thô and Heu have pile-dwellings. The Quan-trang submit all boys (ca. 12 years) to a sort of sacerdotal initiation. Among the "black Lolos" a harvest custom of a sexual nature (see chap. II. of Westermarck on Marriage) prevails.

Burchhardt (H.) Ost-Arabien von Basra bis Maskat auf Grund eigener Reisen. (Z. d. Ges. f. Erdk. z. Berlin, 1906, 307–322, 7 pl.) Describes journey in eastern Arabia from Basra to Muscat, Dec., 1903–March, 1904. Contains notes on people, towns, sheiks, etc. The caves of Gara are used for cool summer-residences. The pearl-fishing of the coast, slavery of a mild sort (in several places, e. g., at Dobbay, the greater part of the inhabitants are slaves), etc., are discussed. At Dobbay articles "made in Germany" were for sale, and English cakes and drops were to be had.

Buturlins Expedition an die Kolyma. (Globus, Brnschwg., 1907, XCI, 192–193.) Briefly résumés the results of the expedition of S. A. Buturlin in 1905 in the region of the Kolyma. The dominant peoples are Yakuts and Russians (these live in winter in fixed houses, but in summer rove about the Delta and have summer-dwellings), with some Yukaghir and Chukchees. The Yakuts of the Delta are Russified, having given up their own language for a broken Russian. On the middle Kolyma, however, the Yakuts have preserved type, customs, and speech, and here even the Russians speak Yakut.

David (Alexandra) Le pacifisme dans l'antiquité chinoise. (Mercure de

France, Paris, 1907, 465-471.) Discusses the doctrines of peace as found in ancient Chinese writings, particularly the teachings of Meh-ti, which are not so utterly renunciatory in the matter of non-resistance to evil as those of Tolstoï.

Davis (C. H. S.) A new aspect of the Sumerian question. (Am. Antiq., Chicago, 1906, XXVIII, 97-99.) Résumés Prof. M. Jastrow's article in the *Journal of Semitic Languages* for January, 1906. The theory is still growing in favor that "Sumerian" is not a "Ural-Altaic," or any other language absolutely non-Semitic, but rather "a highly complicated and largely artificial system for writing Babylonian, devised on the basis of an earlier ideographic system before a simpler phonetic system was introduced."

Dodd (Isabel F.) The city of the creed. (Rec. of Past, Wash., 1906, V, 323-331, 12 fgs.) Historical archeological account of Nicea in Bithynia — gates, wall, site of Bishop's palace, tower of Lascaris, Turkish buildings, etc.

Dussand (R.) Anciennes civilisations, fouilles et découvertes. (R. de l'Éc. d'Anthr. de Paris, 1907, XVII, 97-103.) Reviews briefly recent studies of the Hittites (Winckler), Mesopotamian excavations, mines of Sinai (Weill), relations between Spain and the Orient (Melida), Oriental religions in Roman paganism (Cumont), Diana of Ephesus (Hogarth).

—— L'Île de Chypre, particulièrement aux âges du cuivre et du bronze. (Ibid., 145-175, 14 fgs.) First part of a résumé of our knowledge of ancient Cyprus, especially in the ages of copper and bronze. After giving an account of investigations and investigators, D. discusses the primitive population (Cyprus was colonized, probably toward the end of the neolithic period, by Ægean tribes of the same race as those of Crete), the general characteristics of the neolithic epoch and of the copper and bronze ages (polished stone implements rare; no neolithic tombs; pierced monoliths; long copper period with tombs; first and second bronze epochs, the second Mycenæan; inhumation in copper and bronze epochs; local ceramics abundant and varied but poor in inspiration; terra cotta figurines, rude idols, etc.), Cypriote ceramics (subneolithic; copper age with relief or incised decoration; first bronze age with painted geometric design, common pottery painted or in relief; second bronze age or Cypro-Mycenæan; Græco-Phenician), etc.

Fritsch (G.) Ueber die Verbreitung der östlichen Urbevölkerungen und ihre Beziehungen zu den Wandervölkern. (Globus, Brnschwg., 1907, XCI, 8-14, 21-26, 37-44, 19 fgs.) Treats of the Veddas of Ceylon ("the furthest displaced representatives of an Asiatic primitive people, scattered in island-like groups through the greater part of Central and Eastern Asia"), and their cognates in the wild tribes of Hindustan (Yeruwa, Chûangs, etc.), the Miao-tse of China, the Senoi of Malacca, the wild Hiengs of Cambodia, the aborigines of the Andamans and Nicobars, the Kubus of Sumatra, the Australian blacks, Papuans, aborigines of the Solomon Is., New Hebrides, Negritos of the Philippines, Alfurus of Celebes, etc. Dr F. recognizes two types among the Australians, and traces of the real Australian type occur among the Negritos of the Philippines and elsewhere out of its present area, the Alfurus are Veddaoid as are probably several other peoples of the East Indies. In the Philippines the most primitive population was Australoid, followed by a Negritic element from the West, to which latter were added Indo-Chinese peoples. The *Pithecanthropus* resembled the Australian, who is about the oldest representative of the human race, having been preserved by the wild and otherwise protective environment. In the tropic East, Africanoid elements are also discernible.

Goldstein (F.) Die Herkunft der Juden. (Ibid., 124-128.) Discusses the origin of the Jews, particularly the theory of their origin from a few merchant-families of India (colonization of Europe from Canaan), properly rejected by the author. Although the Christian as well as the Jewish religion came from Canaan, neither, as a somatic unity, came from that land. G. seeks out a characteristic Jewish type among the peoples of the Caucasus.

Goodspeed (E. J.) Tertag and Sarkis; an Armenian folk-tale. (Amer. Antiq., Chicago, 1906, XXVIII, 133-134.) English version from the Ethiopic (Geez) of "the story of Sarkis of Armenia, and the story of St Tertag, King of Armenia, and the story of the King of Rome, and the occasion of the separation of the "Armenians from the faith of Rome."

Heidenstämme (Die) der Malaiischen Halbinsel. (Globus, Brnschwg., 1907, XCI, 108–110.) Critical résumé of Skeat and Blagden's *Pagan Races of the Malay Peninsula* (2 vols., Lond., 1906).

Hodson (T. C.) The "Genna" among the tribes of Assam. (J. Anthr. Inst., Lond., 1906, XXXVI, 92–103.) Treats of the tabu, or *genna*, among the Tibeto-Burman tribes headed by the Mertheis (Manipuris) — social organization, communal and crop tabus, individual tabus (child-birth, marriage, etc.), food tabu, tabu on birth and death of animals in house, warrior's tabu; origin of gennas, gennas and magic, and religion. Many gennas are protective, other clearly magical. H. sees in the genna customs "the foundation of all communal life." Communal gennas arise from individual gennas.

Hoskins (F. E.) The rock city of Petra. (Nat. Geog. Mag., Wash., 1907, XVIII, 283-291, 5 pl.) Treats of the *sik*, or entrance defile, "Pharaoh's treasury," the great theater, the Corinthian tomb and temple, the *dier*, or monastery, etc. Further details concerning Petra will be found in W. Libbey and F. E. Hoskins' *The Jordan valley and Petra* (2 vols. N. Y., 1905).

Hosseus (K.) Kurzer Bericht über den Verlauf zweier in das Innere von Siam ausgeführten Studienreisen. (Z. d. Ges. f. Erdk. z. Berlin, 1906, 190–196.) Contains a few ethnographic notes. The natives of the Doi Djieng, Dao region are known to the Siamese as Pigâh, "possessed by devils." The ruined ancient Siamese town of Djieng Hsen is of great archeological importance. Petchabun is half Siamese, half Laotian.

Lapicque (L.) Les nègres de Asie et la race nègre en général. (Bull. Soc. d'Anthr. de Paris, 1906, V^e^ S., VII, 233-249.) Treats of the Asiatic Negroes (Melanesians and Papuans, and Negroid Australians; Negritos of Malacca and the East Indian Archipelago; Negroes of Hindustan, Dravidians and pre-Dravidians, traces of Negro peoples from India to the Red Sea). The general character of the Negro and the physical peculiarities of various Negro and Negroid races are also discussed. The primitive Negro race, extending originally from Africa into the Indo-Pacific islands, in ancient times, is fundamentally one. L. considers the radio-pelvic index a test of Negro race. The mixed races (e. g., Arab-Negro) are and have been numerous and important in Africa. According to L. a Negro is "a man with black skin, frizzly hair, and flat nose."

Maurer (F.) Die Ablösungsformen im Alten und Neuen Testament. (Globus, Brnschwg., 1907, XCI, 111–113.) Treats briefly of the various forms of absolution in the Hebrew Bible — circumcision, animal-sacrifice, paschal lamb, abstinence from eating of blood, exposure of children, hierarchy, etc. M. thinks that human sacrifice is the beginning and the end of all attempts to appease the deity.

Nagai (*Dr*) Die Urbewohner Japans. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, 70–74.) Treats of prehistoric and protohistoric Japan, peoples, archeological remains, etc. — kitchen middens, dwelling-pits, pottery, ornaments, tools and implements, idols, etc. Various hypotheses are briefly discussed (Torii, Tsuboi, Koganei). Dr N. accepts the views of Koganei, in accordance with which the stone-age people of Japan are identified with the Aino — "Japan was once an Aino realm."

Nelson (T. F.) Site of ancient Persepolis. (Rec. of Past, Wash., 1906, VI, 131–137, 4 fgs.) Treats briefly of palace-ruins, "Portal of all Nations," "Hall of 100 Columns," inscription of Xerxes, tombs of the kings, etc.

Offord (J.) Babylonian and Assyrian dream-books. (Am. Antiq., Chicago, 1907, XXIX, 17–21.) Based on A. Boissier's *Choix de textes relatifs à la divination Assyro-Babylonienne* (Genève, 1905). It would appear that much of the matter in Artemidorus' *Oneirocritica* may have come from Asia Minor, and O. sees "proof of the Babylonian origin of many members of the Greek pantheon."

Papillault (G.) Associations des jeunes gens chez les Turcomans. (R. de l'Éc. d'Anthrop. de Paris, 1906, XVI, 369–372.) Reproduces from a French translation (Paris, 1840) of W. D. Cooley's *General History* some observations of Ibn Batuta (1324–1325 A. D.) concerning associations of youths among the Turcomans of Anatolia; and gives a brief résumé of the chief conclusions of Schurtz's *Altersklassen und Männerbünde* (Berlin, 1902).

Peet (S. D.) The history of the antediluvian world. (Am. Antiq., Chicago, 1906, XXVIII, 17–32, 8 fgs.) Compares Biblical and pagan views of

God, cherubim, first death, location of Paradise, war of Titans.

—— The bow in the cloud. (Ibid., 65–80, 6 fgs.) Compares Biblical and pagan accounts of ark and deluge, origin of sacrifice, the covenant, Jehovah and foreign divinities, etc.

—— The inheritance of Noah. (Ibid., 1907, XXIX, 1–16, 5 fgs.) Treats of the story of Cain and Abel, the distinction between the good and bad (obedient and disobedient) classes of mankind, history from the Fall to the Flood, ante-Noachic inventions, etc.; compares Biblical data with traditions, myths, etc., of ancient and primitive peoples, from which the author argues that "the Scripture story is perfectly correct and reliable."

Proctor (H.) Hebrew anthropology. (Ibid., 1906, XXVIII, 11–13.) Discusses the Biblical Nephelim (and their gigantic descendants, the Anakim), Horites, etc.

—— Chinese drums, bells and towers. (Ibid., 89–91.) Based on S. Bushnell's recent work on *Chinese Art*, published by the British Government.

—— The history of the Hebrew alphabets. (Ibid., 329–334.) Points out the refutation of the de Rougé Phenician theory and seeks to show that "the Hebrew square character was derived directly from hieroglyphics."

Sayce (A. H.) A Babylonian tourist of the Abrahamic age and his map of the world. (Ibid., 334–338, 1 fg.) Abridged from article in *Expository Times* (London). This interesting map with accompanying description are at least as old as the Khammurabi period, and has a bearing on the geography of the "Garden of Eden."

Schrader (F.) Nouvelles observations sur l'atmosphère de l'Asie et son rôle historique. (R. de l'Éc. d'Anthr. de Paris, 1907, XVII, 176–179.) Résumés and discusses the observations of Sir H. Macmahon and E. Huntington in the *Geographical Journal* for September and October, 1906, on the climate and drying up of Seistan, etc., in central Asia. The presence of the Caspian sea, near the boreal régime of Seistan, "proves the existence of the narrow bond uniting the blowing of the monsoons, and, hence, that of the two great human hives of India and China, with the desiccation of Central Asia since the end of the glacial epoch."

Scidmore (E. R.) Archeology in the air. (Nat. Geog. Mag., Wash., 1907, XVIII, 151–163, 11 fgs.) Gives account of visit to the ruins on the rock of Sigiri, near Dambool, Ceylon. Here was the fortress and palace of King Kasyapa, afterward a monastery, subjected last to Malabar marauders.

—— Women and children of the East. (Ibid., 248–271, 23 pl., 1 fg.) A collection of interesting and valuable illustrations showing the life, activities, etc., of Cingalese, Tamil, Toda, Hindu, Japanese, Javanese, Burmese, Manchu, and Siamese women and children.

Shedd (E C.) Climate and history in western Asia. (Rec. of Past, Wash., 1907, VI, 3–8, 5 fgs.) Climate has had a most important rôle — "history of the great Oriental empires is in the main the history of the city men, who inhabit the irrigated districts." Absolutism was the price paid for coöperation on a large scale. Climatic conditions also produced nomad life and kept it beside the city. Hungry shepherd hordes "lived" on the cities and camped on their ruins, — the nomads were often fierce warriors who destroyed, and built nothing.

Dr **Stein's** letzte Forschungen in Ostturkestan. (Globus, Brnschwg., 1907, XCI, 96–97.) Résumés the latest investigations of Dr Stein in Khotan (here dwell the isolated Pakhpo, congeners of the Galchas), at the ruins of Rawak and Domoko, Khadahk, etc.

Sykes (P. M.) The Gypsies of Persia. A second vocabulary. (J. Anthrop. Inst., Lond., 1906, XXXVI, 302–311.) Gives vocabularies of Jiruft, Sirjan, and Khorasan Gipsy dialects of 96 words with translation in French and English.

Tafel (A.) Dr Tafels weitere Reisen in Nord-China, (Z. d. Ges. f. Erdk. z. Berlin, 1906, 356–365). Extract from letter of Feb. 25, 1906, giving account of journey from Kwei-hwa-tch'eng to Sharakuto. Contains notes on towns, people, etc. — the Ordos, particularly.

White (G. E.) A primitive cattle-shrine in Asia Minor. (Rec. of Past, Wash., 1907, VI, 99–102, 3 fgs.) Describes the ruins of a temple, etc. (the pottery remains date from about 600 B. C.) — shown by the numerous baked clay figurines of oxen or cows with branching horns, to have been an ancient cattle shrine — on the top of Chirishli Tepe, near Cavak, 25 miles from the Black sea. At Eye are Hittite sculptures with a bull-

sacrifice or bull-worship dating from 1200 B. C. Cattle worship was prominent among the primitive peoples of this region.

Wright (F. B.) The fortress of Masada. (Ibid., 1906, v, 368–372, 4 fgs.) Brief account of the ruins of the last fortress held by the Jews after the fall of Jerusalem in A. D. 71. It is 15 miles north of Zaweirah near the Dead sea.

Zugmayer (E.) Eine Reise durch Ostturkestan und Westtibet. (Globus, Brnschwg., 1907, XCI, 133–138, 5 fgs.) Contains a few notes on the town of Old Kashgar, Jakub Beg, Khotan, etc.

INDONESIA, AUSTRALASIA, POLYNESIA

Albrecht (F.) Chinesen in Samoa. (Globus, Brnschwg., 1907, XCI, 176–177.) Notes on the recent introduction of Chinese coolies (now ca. 1000) in Samoa. The Samoan men look down upon the Chinese, the women not so much.

Brandeis (A.) Ethnographische Beobachtungen über die Nauru-Insulaner. (Ibid., 57–62, 73–78, 9 fgs.) Treats of the natives of the volcanic island of Nauru, west in the Gilbert group in the Pacific. Houses and furniture, fire-making by stick-friction, food and food-tabus (never cannibals), clothing and ornament (face-painting in dances; tattooing rare; ear-ornaments), fishing (lines, hooks, nets, torches), catching frigate-bird, domestic animals (pigs, dogs of mixed race, fowls, etc.), plants (cocoanut, pandanus, etc.), dances (mostly pantomimes; chiefly from the Gilbert Is., the language of which is used in the accompanying songs), plays and games (ball with strict rules), canoes, basketry, oyster-shell ornaments, rope and threads, battles (formerly very frequent), chiefs (only village elders), slaves (rare), marriage, inheritance, etc., position of woman (good), birth and death customs (hut-burial), skull-cult (now absolete), gods (introduced from Gilbert Is.), shamanism, festivals (puberty-ceremonies of chief's daughter), astronomy, etc., origin-legend.

Giant (A) in a cave An Australian legend. (Am. Antiq., Chicago, 1907, XXIX, 29–31.) Tells how his mother-in-law and her two grandchildren killed the giant Murkupang, whose spirit became a night-bird, *mumgatch*.

Hagen (—) Ueber meine letzte Reise nach Sumatra und Banka. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 80–81.) Brief notes on the Orang-Kubus in the primitive forests of Palembang, still nomadic with no agriculture or cattle-breeding. They number some 3000 divided into ca. 30 tribes. Their religion is very primitive (bodies are mummified and treated with fragrant herbs). Skin-diseases are very common and infant mortality great. Dr H. brought three skeletons of Orang-Kubus back with him to Europe.

Hose (C.) *and* **Shelford** (R.) Materials for a study of tatu in Borneo. (J. Anthr. Inst., Lond., 1906, XXXVI, 60–91, 8 pl., fgs.) Presents and discusses much valuable material from the numerous Bornean tribes: Kayan, Kenyah, Kenyah-Kalamantan, Kalamantan, Sea-Dayak, etc. Character of designs, sex, part of body tatued, ceremonials (very little, except with Kayan women, with whom it is very elaborate), and object of tatu (ornament, sign of bravery, curative end protective against disease, etc.), are discussed. A table-résumé of facts and conclusions is given. The Kayans are the most and best tatued. The Land Dayaks, Punan and Maloh are not tatuers.

Maoris (The) of New Zealand. (Nat. Geog. Mag., Wash., 1907, XVIII, 191–199, 7 pl., 1 fg.) Brief note with excellent photographs of Maori types, etc. The Maoris number some 35,000 and have retired to certain "reservations" in the northern provinces. In many things they are worthy rivals of the whites, and both men and women are proud of their right to vote.

Mathews (R. H.) Sociology of aboriginal tribes in Australia. (Am. Antiq., Chicago, 1906, XXVIII, 81–88.) Brief descriptions of the primary and secondary, "blood" and "shade" divisions of the Kurnu, Kamilaroi, some Victorian tribes, and the Warramonga, with notes on totems, descent, marriage, etc.

—— The totemistic system in Australia. (Ibid., 140–147.) Treats of Warramonga, Wombaia, Kurnu, Kamilroi. Mr M. believes that "neither promiscuous intercourse of the sexes, nor what has been called 'group marriage,' have ever existed during the social institutions of the aborigines of Australia." Totems, etc., have been "developed in accordance with surrounding circumstances and conditions of life."

—— Folk-lore of some aboriginal tribes of Victoria. (Ibid., 1907, XXIX, 44–48.) English text of legends telling about how snakes became poisonous; ngurrau, the the turkey-buzzard; dyirri-dyriwitch, the inlly wagtail; grapkill the hawk, and the special characteristics of each originating at the time.

Methods (Some) of fishing in Hawaii. (So. Wkmn., Hampton, Va., 1906, XXXV, 145–149, 6 fgs.) Treats of native and Japanese fishermen. Boats, hooks, nets, spearing, "torching," hand-capture (mollusks, algæ), octopus-fishing with cowrie-shell, etc, are described.

Pöch (R.) Bemerkungen über die Eingeborenen von Ost- und Süd-Neu-Guinea. (Z. d. Ges. f. Erdk. z. Berlin, 1906, 490–492.) Contains brief notes on the natives of the Cape Nelson region (in November, 1905, all the tribes held dances), Collingwood Bay (from a mound the author obtained pottery far superior to any in modern New Guinea), Port Moresby, Dutch New Guinea (lowest Papuan tribe met) — the Kaja-kaja of Meauke have no pottery, roast their food before the open fire, are head-hunters, have a complicated totem-system. The Kworafi of Cape Nelson are pile-dwellers with a decadent totemic system. Near Port Moresby are the Hulah, notable by reason of their light color, often blond hair, European features, etc.

Schlaginhaufen (O.) Untersuchungen über den Sagittalumfang und seine Komponenten an 100 Schädeln aus Melanesian. (Mitt. d. V. f. Erdk. zu Dresden, 1907, Sbdr., pp. 10–40, 14 fgs.) Details results of measurements of sagittal circumference of 100 Melanesian skulls (20 each from Nusa, Gazelle penin., delta of Purasi, lower Fly river, Torres Sts., etc.) — the range is 330–398 mm. Of these skulls 73 were dolichocephalic, 25 mesocephalic, 2 brachycephalic. The fronto-parietal, fronto-occipital, and parieto-occipital indices are considered.

Senfft (A.) Die Rechtssitten der Jap-Eingeborenen. (Globus, Brnschwg., 1907, XCI, 139–143, 149–153, 171–175.) Résumés the legal customs of the natives of the island of Yap in the Carolines — family and personal law (parental, inheritance, marriage, position of woman, pregnancy and tabus, children, divorce, *menses*, adoption, tattooing, etc., prostitution, freemen and dependents, blood covenant, belief in immortality, death), property-law (currency, land, family and community, protection of property, hospitality, finds, stolen things, pledging, sale, loan, gift, security, etc.), criminal law (accident, blood-revenge, right of asylum, etc.; adultery, wife-stealing, rape, abortion, wounding, treason, libel, "magic," institutions for enforcing law, offenses against custom), state, government and national law (state and community, chiefs and other officials, women chiefs, property, legislation, war, international relations), etc. The Yap population consists of 80 percent freemen and 20 percent *milingei*, or dependents. Monogamy is now the rule. The position of woman is subordinate. The pater-familias has no right to kill his children. Adultery of the husband (except with a prostitute) is cause for divorce. Segregation of girls at menstruation is in vogue.

Thomas (N. W.) Addenda to Australian canoes and rafts. (J. Anthrop. Inst., Lond., 1906, XXXVI, 409–412.) Additional data to article in previous volume. Notes further extension of canoe-area in west of Northern Territory. Use of raft was not uncommon in Riverina district. Attention is called to relation between canoe and water-vessel of bark or hollowed wood. Malay dug-out, as well as bark canoe is found in the Gulf of Carpentaria, west side. Somewhere north of Moreton bay one tribe used human figure-heads for their canoes.

Worcester (D. C.) The non-Christian tribes of northern Luzón. (Philippine J. of Sci., Manila, 1906, I, 791–873, 67 pl.) See the review by Dr A. E. Jenks in this issue.

AMERICA

Adams (H. C.) Picturesque Paramaribo. The city that was exchanged for New York. (Nat. Geog. Mag., Wash., 1907, XVIII, 365–373, 6 pl., 1 fg.) Contains good illustrations of ethnic types, etc., with some notes on Javanese, Hindus, Negroes, etc. The patois of the blacks is called *taki-taki*, and their highly colored kerchief draping the head is the *Kŏttomissi* costume. The "Bush negro" is a "new" type of African.

Barbour (E. H.) Ancient inhabitants of Nebraska. (Rec. of Past, Wash., 1907, VI, 40–46, 5 fgs.) Corrects misapprehensions, describes *situs*, methods of in-

vestigation, etc. Human bones have been found in the loess in several new localities near Long's Hill. At Long's Hill 3 races of men are said to be represented and the fragments indicate probably 10 or 12 skulls ("of Neanderthal type") from the loess bone bed. Prof. B. thinks that "lines of evidence everywhere have been leading toward belief in Glacial man in America, and possibly the loess beds in Florence (Nebr.) may furnish proof."

Bayliss (Clara K.) The McEvers mound, Pike county, Ohio. (Rec. of Past, Wash., 1907, VI, 21–27, 2 fgs.) Describes excavation by Mr McEvers in 1905 of this enormous mound, which "seems to have been constructed of baskets full of sand, clay, ashes, and charcoal; and the separate loads can be distinctly traced," and of seven other smaller mounds, their contents, etc. In the large one was found a log vault, with indications on the flooring of many skeleton burials. Human and animal bones, pottery, flints, pearl beads, etc., were found, and in one case a patella and tooth of a horse (post-European).

Blackman (E. E.) Prehistoric man in Nebraska. (Ibid., 76–79.) Cites four items (human remains from beneath 10 ft. of loess soil, near Lost Dog creek, Neb., with implements, pottery, fragments, etc.; a limestone spear from a hill not far from where the Nebraska loess man was found; a leaf-shaped implement made from agate in petrified wood, unearthed about a mile from the "loess man"; a bowlder from Cedar county (now on the campus of the Nebraska State University) — on the top are the imprint of a left foot and many deeply worn characters, as evidences of pre-loess man in Nebraska.

—— Nehawka flint quarries. (Ibid., 103–110, 6 fgs.) Gives an account of the investigations of Mr Pollard in 1901 and of the author in 1901–1903, of the Nehawka (Nebr.) quarry pits used by the Indians in times anterior to the employment of firearms. Rudely chipped flints of the "Quivera type" are found on the surface, but so far no worked flints in the mine. Fire and water are thought to have been used by the primitive miners. A few potsherds have been found on the surface.

Brierley (J.) *and* **Parsons** (F. G.) Notes on a collection of ancient Eskimo skulls. (J. Anthr. Inst., Lond., 1906, XXXVI, 104–120.) Describes, with details of measurements 17 (female 2, child 1) Eskimo skulls from old graves near Godthaab and Christianshaab, on the islands of Rybeholm and Storoer and at Ikerasak. One skull is possibly European. All are markedly dolichocephalic (av. index 73.8). Earlier external closure of sutures is noted in Eskimo as compared with European crania. A number of special features are noted.

Brower (C. De W.) The shell heaps of Florida. (Rec. of Past, Wash., 1906, V, 331–338, 6 fgs.) Briefly describes the more important heaps and heap localities, the constitution, contents, etc. Near New Smyrna are immense heaps. In these Florida middens human and animal bones, implements of bone and flint, sinkers, bowls, spoons and other utensils of shell, pottery, rude clay images, ornaments, etc., have been found. Also a few objects of metal and occasionally beads, etc., of glass. Some of the shell mounds are of great antiquity and occupancy by successive races is often indicated. The heaps have been made use of for lime and road-making by the whites.

Burpee (L. J.) The romance of the fur-trade. (Trans. Ottawa Lit. and Sci. Soc., 1907, 82–107.) Discusses the travels and experiences of de la Vérendrye (notes on contact with Mandans and Sioux), Radisson, Hearne (Chipewyans and Eskimo), Hendry (Blackfeet), Henry (Chippewas, Crees, Sioux, Saulteurs), etc. The "worsted *mashguemcate*" of Madame Langlois (p. 105) is probably a *matshigoté* (Ojibwa for "petticoat"). In Henry's time the Chippewas called rum *English milk*.

Burrows (E. D.) The Pueblos of America. (So. Wkmn., Hampton, Va., 1906, XXXV, 78–87, 5 fgs.) General account. Author visited the chief Pueblos. Notes on Zuñi, Moqui, Taos, Laguna, Acoma, Katzimo (the "Enchanted Mesa"), etc.

Bushnell (D. I., Jr) The origin of wampum. (J. Anthr. Inst., Lond., 1906, XXXVI, 172–7, 2 pl.) Describes the wampum of the Tradescant Museum in South Lambeth (from catalogue of 1656), the drawings of John White and the small wampum collection now in the British Museum (two small belts, several small bands, a number of strings of beads, etc.). The author holds that wampum originated with the Indians,

although the whites soon took to manufacturing the beads. As late as 1700, however, "the Indians of New England were making wampum in their primitive fashion."

Cross (J. F.) Cape Prince of Wales and its people. (So. Wkmn., Hampton, Va., 1906, XXXV, 535-539, 4 fgs.) This cape has one of the largest Eskimo settlements on the Arctic coast. The physical and mental characters of the natives are briefly noted. They are traders by nature and their highly developed commercial instinct has enabled them to share in the development of the wealth of the region. Their women do not care to intermarry with the whites. Their future progress is assured if they are not demoralized by paternalism of the whites or deprived of their sea-food, etc., by them.

Curtis (W. A.) The light fantastic in the central west. Country dances of many nationalities in Wisconsin. (Century, N. Y., 1907, LXXIII, 570-579, 15 fgs.) Treats of Irish, German, Swiss, Norse dances especially; also Bohemian, etc. At New Glarus is the capital of the largest Swiss settlement in the country. Their chief dance is "Kilby Monday" (= Kirchweihe). At Prairie du Sac is Count Haraszthy's old Magyar settlement.

Du Bois (C. G.) The primitive Indian as an agriculturist. (So. Wkmn., Hampton, Va., 1906, XXXV, 500-503.) Contact with the whites (as, e. g., with the Pimas) "destroyed the agricultural life which was as native to the aborigine as to himself." The agricultural productions of the Indians have been overestimated. Miss D. considers "extremely conservative" the estimate of 1,000,000 for the aboriginal population of the U. S. — 10,000,000 would be more like it, she thinks.

Flathead Indians, The. (Am. Antiq., Chicago, 1907, XXIX, 25-28.) Sketch of contact with whites. Reprinted from the *Record-Herald,* Chicago.

Flower (F. A.) Ancient American free delivery. (Rec. of Past, Wash., 1906, V, 363-365.) Describes the manner in which members of the Pillagers (Ojibwa), etc., of the north shore of Lake Superior notify the chief of the tribe of their inability to attend the wild-rice by depositing in some *cache* (rock-crevice, holes in or under trees, etc.), a piece of bark, wood or bone with "hieroglyphics" on it. This is forwarded by the first-comer along the trail. The Pillagers have "always" had this "free delivery" system.

—— Preserving Wisconsin mounds. (Ibid., 1907, VI, 137-140, 2 fgs.) Gives account of "almost sacrilegious destruction" still in process. Efforts by the State University, Beloit College, Carroll College (Waukesha), the State Archeological Society, Waukesha Women's Club, Wisconsin Federation of Women's Clubs, Milwaukee Museum, Wisconsin State Historical Society, have all done good work. A large mound area near Racine, the "man mound" at Baraboo, the Cutler mounds at Waukesha are now public property, parks, etc.

Frič (V.) I. Die Bilderschrift der Machikui-Indianer im Chaco Boreal. II. Mythen- und Menschenwanderungen in Südamerika. (Korr.-Bl. d. D. Ges. f. Anthrop., München, 1906, XXXVII, 144-149, 3 fgs.) Describes the picture-writing of the Machikui Indians of the northern Chaco here one finds (e. g. in the signs for "tree," "fish-dance," etc.) the beginnings of hieroglyphics. F. notes the confusion in the linguistic nomenclature of this area; also the frequency of speech-changes among the Chaco Indians — the accent, however, remains. The second paper treats of migrations of myths and peoples (F. finds himself in disagreement with Ehrenreich, e. g., as to fire-bird, cult and sacrifice, which do occur in S. America; fables do not develop here independent of their carriers as may have been the case in the Old World, where written languages exist). F. finds the Kadiuveo myths practically the same as reported by Azara two centuries ago, and with them myths pass for religion and are not annotated, being told by the priests or sung in the "spirit language." After this come the animal tales, etc., over which the Indians make merry — the two things are never confused. Between the "wild" Indians and the Cordillera peoples F. notes these differences: The former are more democratic and casteless even over against budding priesthoods, do not comprehend celibacy, have a greater horror of incest, are monogamous with rare exceptions — the Incas represent the greatest remove from such primitive conditions. F. places far back in human history the origin of the many parallels in myths and legends —

he would make the *Homoa lalus* rather a *Homo mythopœus*. Mixture of myths means mixture of blood.

—— Sambaqui-Forschungen im Hafen von Antonina, Paraná. (Globus, Brnschwg., 1907, XCI, 117–122, map, 4 fgs.) Gives account of the situation and nature of three sambaquis, or shell-heaps, investigated by the author, their contents, etc. In all the strata (corresponding to different culture periods, or to different peoples) corpses had been buried with votive gifts of stone implements, rude and unpolished; sometimes with evidences of cannibalism. F. thinks these shell-heaps really represent several culture-stages, some of which belong to the ancestors of the Botocudos. Some petroglyphs in the neighborhood of Antonina are figured; also some from St Domingo near Corumba in Bolivia seen by the author, and, previously, by Boggiani. In the sambaquis were found stones used for breaking open oysters, as by the people of the country to-day. These shell-heaps served as "bridges" over marshes, as enclosures of "fish-ponds," etc., as well as being piles of refuse.

Frič (V.) *and* **Radin** (P.) Contributions to the Study of the Bororo Indians, with a description of an ethnographic collection presented to the Berlin Museum für Völkerkunde. (J. Anthrop. Inst., Lond., 1906, XXXVI, 382–406, 3 pl.) Treats of habitat and history; F.'s journey from Colonia Christina to the Indian village, where the *marido* and the *mano*, the two most important dances of the Bororo were observed (in case of the first) and inquired about; social institutions: chieftainship ("most centralized tribal organization known among S. American Indians") and *balururu* songs sung by chief with chorus of children (native texts), marriage, divorce, etc., religion (fear of evil spirits, spirits of dead; human soul regarded as bad spirit is *Bope*), agriculture, dress and ornament (penis-cuff, bark-corset; crowns of jaguar-claws, feather diadems, etc.; ear-pendants of feathers, bark, palm leaf, etc.; lip-ornaments, chains and sticks of several kinds; arm-bands of *arara* feathers, breast ornaments of claws, teeth, and feathers), weapons, (bows, arrows, the former of 3, the latter of 5 or more types), musical instruments ("trumpets," bamboo flute, calabash-rattles, etc.), dolls of palm-leaf and calabash. Pages 400–402 contain a Bororo vocabulary of some 170 words (from Boggiani's Ms.), with Italian and English equivalents.

Gigliolo (E. H.) Appunti sulle condizioni attuali delle tribù indigene dell' alto Madeira e regioni adiacenti (Brasile e Bolivia), raccolti dal dott. Andrea Landi. (A. per l'Antrop., Firenze, 1906, XXXVI, 219–228.) Notes on the present condition of the native tribes of the upper Madeira and the adjacent parts of Brazil and Bolivia: Pama, Caripuna Urupaz, Parintintin, Cacharary, Iripuna (Aripuaná), Pacahuará, Parecé, Chacobo (Cayubaba), Mojos or Moxos, tribes on the Mamoré and Rio Beni, on the Rio Madre de Dios, Ucayali, Purus. Several of the tribes are here mentioned for the first time. The influence of the *gommeiros* (india-rubber hunters) upon many tribes is very bad. The Caripuná up to within a few years used stone axes. The Parintintin, whom Brinton affines with Tupi, number some 30,000. The Cayubaba, Movimas, Itonamá, and Mosatenes form each a distinct linguistic stock.

Gilder (R. F.) The Nebraska loess man. (Rec. of Past, Wash., 1907, VI, 35–39, 5 fgs.) Describes skulls and their discovery. The type of the lower layer at Long's Hill resembles that of a skull from the same mound found in 1894 by several investigators.

Harris (H. H.) Pajarito ruins — their accessibility. (Ibid., 1906, V, 291–295, 4 fgs.) General description of these cliff dwellings easily accessible from Espanola, New Mexico.

Heilprin (A.) An impression of the Guiana wilderness. (Nat. Geog. Mag., Wash., 1907, XVIII, 373–381, 3 pl., 3 fgs.) The illustrations are of ethnological import, the group of Indian children and the Indian family in particular. The author recently died.

Hepner (H. E.) Tepehuanes of Chihuahua and Durango. (So. Wkmn., Hampton, Va., 1906, XXXV, 157–163, 3 fgs.) Brief account of habitat, physical and mental characteristics (manly and independent, lively, impressionable and impulsive), houses and villages (peopled only at Easter celebration of national sport of foot-races), *mitote* dance harvest-festival, agriculture, religion (nominally Christian, but worship of ancient deities, sun, moon, "master of deer and fire," is kept up in lodge or meeting houses in inaccessible and remote places). The Southern Tepehuanos are more Mexi-

canized than the northern, but are markedly honest.

Herrick (E. P.) Cuban marriage customs. (Ibid., 497–500.) Treats of "medieval customs and onorous Spanish laws still unchanged." The exorbitant fees of the mercenary priesthood make *viviendo juntos* common. Children sometimes attend the wedding of their parents. Marriage is accompanied by six or eight different documents.

Herrmann (R.) Mound builders of the Mississippi valley. (Rec. of Past, Wash., 1906, v, 365–367; 1907, vi, 79–72, 6 figs.) Treats of pottery (the decoration on a Pueblo pot in the author's collection is believed to show "a village of tents, or tepees, enclosed by a stock or fence,"— suggestion of mound arrangements, etc.), bone implements, etc.; "battle" mounds, Indian cremation, tribal or national mounds.

Hervé (G.) Noirs et blancs. Le croisement des races aux États-Unis et la théorie de la "miscégénation." (R. de l'Éc. d' Anthr. de Paris, 1906, xvi, 337–358.) General discussion of the mixture of the whites and blacks in the United States — physiological, sociological; heredity, etc. Dr H. thinks miscegenation "physiologically impotent," never ending in real race-fusion. The utility of crossing appears only in the amelioration of certain exterior characters, of an esthetic order, as it were; also in certain increases in cerebral weight, in actual intelligence, etc. But miscegenation for the masses is not to be recommended as a social method for the *rapprochement* of the two races. While race-intermixtures (Aino-Japanese, Lapp-Scandinavian, Lapp-Russian, Tartar-Slav) elsewhere in the world have often succeeded, "the case of the United States is a special one, to be studied in itself and solved for itself."

Jones (T. J.) Tuberculosis among the Negroes. (So. Wkmn., Hampton, Va., 1906, xxxv, 622–629, 6 charts.) Death-rate from 2 to 7 times that of any other race; mortality much lower before Civil War; high death rate of children — under 15 years seven times that of whites; racial-influence, if any, swamped by environmental influences.

Kelsey (F. W.) Recent archeological legislation. (Rec. of Past, Wash., 1906, v, 338–342.) Treats chiefly of the Congressional act of June 8 and June 29 for the preservation of American antiquities and the creation of the Mesa Verde National Park, in Colorado.

Koch (F. J.) A visit to the Yuma Indian reservation. (So. Wkmn., 1906, xxxv, 593-597, 5 figs.) Contains some notes on education, games and festivals (September corn-feast, "hoop-the-pole," shinny), burning the dead, gambling (cardinal vice), etc.

K. Preuss' Forschungen in Mexiko. (Globus, Brnschwg., 1907, xci, 82–83.) Brief résumé of results of Dr Preuss's investigations among the tribes of the Sierra Madre, under the auspices of the Loubat foundation and the Prussian government. Besides making important ethnological collections, he accumulated much evidence in support of his theory of the origins of religion and art, and, in particular, of the drama.

Lee (J.) Beautiful Ecuador. (Nat. Geog. Mag., Wash., 1907, xviii, 81–90, 5 pl., 1 fg.) Contains a few references to the aborigines. The lost treasure of the Incas is supposed to be hidden in the hills about Latacunga. At Quito may be seen "Indians from a hundred different villages, marked by the cut of the hair, the turn of a hat, or the shape of a poncho."

Lipps (O. H.) The evolution of the Navaho and his blanket. (So. Wkmn., Hampton, Va., 1906, xxxv, 14–24, 6 figs.) Art of weaving learned from fugitive Pueblos Indians, after introduction of sheep by Spaniards. Genuine blanket hand-made; weavers are women, not men as with Pueblos. Designs reflect state of mind and imagination while at the task. Navaho blanket not worn by Navahos themselves.

Mead (C. W.) Peruvian mummies and what they teach. (Amer. Mus. Nat. Hist., N. Y., 1907, Guide Leaflet, No. 24, pp. 24, 5 pl., 3 figs.) Treats briefly of importance of burials, preparation of body, mummy bundles, *huacas* (burial vaults), *chulpas* (stone burial towers), natural mummies, objects found with mummies (weapons and implements, objects of copper, silver and gold, pieces of cloth, pottery and decoration — animal and human figures), trephined skulls, the *quipu*, coca-chewing, etc., in illustration of the Peruvian hall in the Museum.

Mills (W. C.) Prehistoric village-site, Ross county, Ohio. II. (Rec. of Past, Wash., 1906, v, 303–313, 342–352, 17 figs.) Treats of food-resources (animal remains, mussels, plants — corn, beans,

nuts, fruit seeds) and preparation (pottery, stone mortars and pestles, large fireplaces), methods of burial (family burial grounds close to tipi; subterranean storehouses dug near by), home life, etc. Author thinks that the Baum village site, the Gartner site on the Scioto, Ft Ancient and other sites along the Miami belong together representing "Ft. Ancient culture," and establishing the fact that "at one time the valleys of southern and central Ohio were peopled by tribes whose culture was quite uniform throughout the entire section." The details of these investigations will be found in Mr Mills' *Explorations of the Baum Village Site* (Columbus, 1906, pp. 96, 84 fgs.), reprinted from the *Ohio Arch. and Hist. Quar.*, vol. XV.

—— The explorations of the Edwin Harness mound. (Ohio Arch. and Hist. Quar., Columbus, 1907, xvi, repr., pp. 85, 80 fgs.) Treats in detail of the largest mound of the Harness group, near Chillecothe, Ross county, Ohio, noted since the early examination by Squier and Davis in 1846. Of this and of investigations by Prof. Putnam in 1885, by Prof. Moorehead in 1896, brief accounts are given. The author's explorations began in August, 1903. The topics considered are: Object of the mound, charnel house, burials (four different types), artifacts ("from the 133 burials more than 12,000 specimens, including implements and ornaments of copper, shell, bone, and stone were removed; the large copper plates are noteworthy) — "spool shaped ear-ornaments of copper, copper-covered ornaments, pendants and axes of copper, fragments of decorated pottery, bone awls, needles, and ornaments, pendants of bone and teeth, perforated teeth and claws of animals, engraved bones, mica ornaments and designs, "platform" pipes, flint and obsidian implements, stone gorgets, quantities of granular graphite, objects made of shell (drinking cups, beads, — also imitations of beads in clay), textiles (coarse matting and some finer patterns of reticulate weaving), etc., were found. This mound belongs to the "Ft. Ancient Culture," which was followed by the "Hopewell Culture." See review of Mr Mills' recent writings in this issue.

Mooney (J.) A Cheyenne tree burial. (So. Wkmn., Hampton, Va., 1907, xxxvi, 95–97, 1 fg.) Describes burial of three (victims of fever, father, mother, and little girl) Cheyenne Indians in a cottonwood tree. The child had its rag doll. In another case, the little girl's rag doll had also been laid to rest with her.

Patron (P.) La veracidad de Montesinos. (Rev. Histor., Lima, 1906, I, 289–303, 4 pl., 5 fgs.) In this study of Montesinos, the Peruvian historian of the 17th century, P. concludes that his veracity is, on the whole, not less than that of other important authorities. Of his two chief assertions, the existence of a pre-Inca period, and the former possession by the Peruvians of a primitive system of writing (afterward lost and replaced by the *quipus*), the first is now proved, and the second, P. thinks, likewise, but this is not so, in spite of the evidence here adduced.

Peet (S. D.) The copper age in America. (Amer. Antiq., Chicago, 1906, XXVIII, 149–163, 11 fgs.) Treats of the finding of copper among the Indians by the early explorers, its widespread use, employment as ornaments, its association with other relics indicating that certain tribes "had passed out of the lower stage of savagery, and had come into a social condition similar to that which existed in Europe before the opening of history."

—— Copper relics among the mounds. (Ibid., 213–228, 5 fgs.) Treats of the character of the copper implements and ornaments found among the tribes of the Mississippi valley at the time of the discovery, the prevalence of a copper age in this region, the copper relics from the mounds and their geographical distribution, the relics from the emblematic and effigy mounds. The chief source of copper was the mines of L. Superior.

—— Desert of Sahara and the Great American Desert compared. (Ibid., 195–204, 2 fgs.) Contains some notes on the Comanches, etc., as compared with the Arabs of the desert.

—— The distribution of edged tools. (Ibid., 371–378, 9 fgs.) Treats of stone axes, gouges, chisels, chipped spades, hoes, knives, axes, from N. America, the semi-lunar metal axes and circular knives from Peru.

Preuss (K. Th.) Die Hochzeit des Maises und andere Geschichten der Huichol-Indianer. (Globus, Brnschwg., 1907, XCI, 185–192, 6 fgs.) Treats of the Cora Indians and the "wedding of maize" and other legends of the Huichols. Brief German texts are given of "the wedding of maize," "the origin

of the cloud," and of a myth of the stars and the sun. Dr P. has been able to make a rich collection of mythologic and folk-lore material from these Indian tribes. According to P. the oldest tales, like religion, have their root in "the magic power of things." Maize among the Huichol illustrates this theory well.

Sniffen (M. K.) Obstacles to progress among the Sioux. (So Wkmn., Hampton, Va., 1906, XXXV, 36–41.) Criticizes adversely the so-called "work system" recently inaugurated by the Indian Office, which injures the home, and resuscitates dances and other forms of amusement like the Omaha dance and the *magasala* (red-penny bag) or "give away" custom. Farming at home is a remedy.

Some of our immigrants. (Nat. Geog. Mag., Wash., 1907, XVIII, 317–334, 14 pl., 3 fgs.) Collection of interesting photographs of Russian, German, Scotch, Finnish, Hebrew, Alsatian, Polish, Slovak, Ruthenian, Italian, Dutch, Roumanian, Hindu, Persian, Arab, Hungarian, Servian gipsy immigrants, men, women, and children, with some statistics.

Speck (F. G.) Observations in Oklahoma and Indian Territory. (So. Wkmn., Hampton, Va., 1907, XXXVI, 23–27, 5 fgs.) Contains a few notes on Indians and Negroes, with portrait of "a Yuchi Indian landowner and cotton-raiser."

Spring (J. A.) Der Glockenberg von Hermosillo. (Globus, Brnschwg, 1907, XCI, 95–96.) Treats of the "bell mountain" (sounds of bells and other music are heard in windy weather) and the Yaqui legend of Takahuitl, the Moctezuma and the Comanche maiden, lovers, whose voices the music is thought to be.

Stewart (E.) The Mackenzie river basin. (Trans. Ottawa Lit. & Sci. Soc., 1907, 31–48.) Contains a few notes on the Herschel Island Eskimo and the Indians of the region.

Uhle (M.) Las llamitas de piedra del Cuzco. (Rev. Histor., Lima, 1906, I, 387–392, 4 fgs.) Brief discussion of the small stone figures of llamas, etc., found at Cuzco, their form, notable use, etc.— similar objects are still manufactured in the Vilcanota valley, etc. The explanation given to Dr U. by a half-blood Quechua was that these figures served as sacrifices to the *Pachamama*, the hollows being filled with alcohol, wine, coca, etc. These figures are called *llama enq'a*, the whole sacrifice itself *ch'uya*.

Wake (C. S.) Mythology of the Plains Indians. IV. Magical animals. (Amer. Antiq., Chicago, 1906, XXVIII, 205–212.) Treats of beaver and turtle, bear and buffalo — the last especially. To the buffalo is ascribed greater mental power than man's; also ability to transform himself into other beings, etc. The buffalo were believed to have been formerly eaters of human flesh. Among buffalo legends are: Contest between the bear and bull societies (Arikara), origin of the buffalo lodge and the sacred bundle (Arapaho), Found-in-Grass (Arapaho), how the buffalo went south (Pawnee). The buffalo influenced profoundly the mental life of these Indians.

Walker (J. D.) Tuberculosis among the Oglala Sioux Indians. (So. Wkmn., Hampton, Va., 1906, XXXV, 379–384.) Treats of full-blood Oglalas, whose average strength, endurance, and vitality are about the same as that of whites. Tuberculosis among these Indians "does not differ in any respect from this disease among white people." Reservation living with poorly built and insanitary houses, caused the high rate of consumption among the Oglalas, which by reason of the coöperation of the Indians in sanitary remedies was reduced in five years from 148.7 per 1000 to 105.4 cases and from 24.88 per 1000 to 13.45 deaths. Lack of the personal supervision of the physician in whom they had confidence has caused an increase lately.

Wright (R. R. Jr) The Negro in Chicago. (Ibid., 553–566.) Treats of population (about 46,000 to-day) and its growth, source (peopled from Mississippi valley), location (nine-tenths live in distinctly Negro settlements), causes of migration (Southern prejudice, industrial), occupations and professions (great concentration of men in domestic and personal service; large professional class — teachers, lawyers, doctors, clergymen), trades (not followed by many), property (own $4,000,000 worth), culture agencies (church, school, club), etc.

Zurn (R.) Besiedelungsmöglichkeiten in Mexiko. (Globus, Brnschwg, 1907, XCI, 181–183.) Discusses the possibilities of Mexico for German settlers. Z. thinks Mexico may serve to fill in the gap between the Germans in the United States and those in Brazil, etc.

ANTHROPOLOGIC MISCELLANEA

The Boas Anniversary. — On August 9, 1906, Professor Franz Boas of Columbia University, President of the American Anthropological Association, celebrated the anniversary of the doctorate conferred on him by the University of Kiel twenty-five years before. Dr Boas' numerous pupils and friends availed themselves of the opportunity to pay tribute to his ripe scholarship and to mark the occasion by the presentation of an *Anniversary Volume* ("Festschrift") containing forty-four papers by American and German anthropologists. The preparation of the volume was made possible through a number of private subscriptions, particularly through the generosity of Mr Jacob H. Schiff, and was in charge of a committee, of which President Butler served as chairman, and which included the Honorable Andrew D. White, Mr Jacob H. Schiff, Mr Morris K. Jesup, Mr Edward D. Adams, Dr A. Jacobi, the late Honorable Carl Schurz, Dr W J McGee, and Dr Eduard Seler. Many unforeseen circumstances had unfortunately delayed the publication of the volume, which, long *post festum*, was formally presented to Dr Boas on April 16th of this year by the President of Columbia University at a meeting of the University Council. In his response to the President's address, Dr Boas said in part:

MR PRESIDENT, FRIENDS, AND COLLEAGUES —

I find it difficult to give expression to the sentiments that fill my heart — feelings of sincere gratitude to all of you who have so highly honored me by this expression of your appreciation of my endeavors. I wish I could think that the achievements of my scientific career were worthy of so high a tribute as that which your friendship and your kindly indulgence have induced you to pay me, that your kindness has not taken good-will for achievement; but the more fully I am conscious of my own shortcomings, the more strongly I feel that your great gift was prompted by a friendship which I value highly, and of which I shall always be proud. It will be a dear remembrance of years of close association with you and with distant friends — years of enthusiastic work for the advancement of our science and for the spread of those fundamental ideas in which we recognize the wider usefulness of our department of scientific inquiry.

If in my own labors it may seem that I have succeeded in making contributions to science, I shall always gratefully remember that opportunity for

research was given to me by many friends of science — individuals, learned societies, and institutions — who honored me with their confidence and without whose help my work would have remained undone. Not less is my gratitude due to those of my colleagues and friends who have enthusiastically cooperated with me — a cooperation which I fear has not always been easy with one whose work rests essentially in an unfeeling criticism of his own work and of that of others. If I have been able to attempt the solution of any wider problems, it is due only to the help that I have thus received. And even then I do not wish to forget that Anthropology is so new a science that, like the virgin prairie, it yields ample returns whenever the plow turns the soil. In such a science achievement is easy and the recompense of the industrious.

The honor that you have bestowed upon me leads me to look back, and to think to what I may owe the success that has seemed to you to warrant the expression of such high appreciation. I believe I am not mistaken if I see one of its sources in the early training to independent thought and action that I owe to the German universities. It is true that there is danger in the sudden transition from strict school discipline to the freedom of the university, and that many a one succumbs to the temptations of an uncontrolled life. Many others — and I count myself among them — are intoxicated by the new life, and require time and increasing maturity to find their place; but when they find it, they stand on firmer ground, better able to cope with the problems of life and of learning than those who have never left the guiding hand of the master. And still more, after the student has completed his studies, before he is permitted to try his strength as a university teacher, he must for three years prove that he can stand on his own feet. During these years, in the sublime loneliness of the Arctic, and in contact with the active world, I have felt my strength ripen, and I became ready to learn how to teach.

I believe we may still profit in this respect by the example of German universities. Herbart's great word — "*Wer Männer erziehen will, muss Knaben dran wagen*" — is true, not of children only, but also of youths. We are still reluctant to give unhampered freedom to the young man, and to let him choose his own way, even against our advice. It is not easy to develop independence of thought in a university in which college spirit and university spirit are inextricably intermingled — where the college junior, who is still believed to need discipline, may sit side by side with the university student. It becomes still more difficult when the young man expects his instructor to pave the way for him after graduation, and when he finds himself at once installed as a university or college teacher, rather than as a beginner who is training for his profession.

A recognition of service like the one you have bestowed upon me is a mark in the path of life, a reminder that the years of usefulness are passing by only too rapidly. It is also a stimulus to continued effort, which amply offsets many a disappointment and discouragement. I thank you with all my heart.

The presentation copy of the *Anniversary Volume* is appropriately bound in Indian-tanned buckskin leather, adorned on the front with a bronze plaque showing the profile of Charles Cultee in relief. It will be remembered that this was the last surviving Chinook from whose lips Dr Boas recorded the remains of the Chinook language. The frontispiece to the volume, which is illustrated with 37 plates and 32 text figures, is an excellent heliotype portrait of Dr Boas; the mechanical work was done by The New Era Press of Lancaster, Pennsylvania. In the preface, congratulatory letters from Waldeyer of Berlin, O. T. Mason, F. W. Putnam, W J McGee, and L. Farrand are included. The papers are scholarly contributions to science, and cover nearly all branches of anthropology, as will be seen by the following list:

Wilhelm Grube: Die Huldigungsfeier der acht Genien für den Gott des langen Lebens. Ein chinesischer Schattenspieltext.

Henry H. Donaldson, in collaboration with Elizabeth Hopkins Dunn and John B. Watson: A Comparison of the White Rat with Man in Respect to the Growth of the Entire Body.

J. Kollmann: Die Bewertung einzelner Körperhöhen als rassenanatomische Merkmale.

Ales Hrdlicka: Beauty among the American Indians.

Jan Czekanowski: Zur Frage der Correlationen der Muskelvarietäten.

Maurice Fishberg: North African Jews.

A. L. Kroeber: The Yokuts and Yuki Languages.

Roland B. Dixon: The Pronominal Dual in the Languages of California.

Alfred M. Tozzer: Some Notes on the Maya Pronoun.

William Jones: An Algonquin Syllabary.

Alexander F. Chamberlain: Terms for the Body, its Parts, Organs, etc., in the Language of the Kootenay Indians of Southeastern British Columbia.

George Hunt: The Rival Chiefs. A Kwakiutl Story.

Pliny Earle Goddard: A Graphic Method of Recording Songs.

Richard Andree: Scapulimantia.

John R. Swanton: A Reconstruction of the Theory of Social Organization.

W. H. Holmes: Decorative Art of the Aborigines of Northern America.

Clark Wissler: A Psycho-Physical Element in Primitive Art.

Charles W. Mead: The Six-Unit Design in Ancient Peruvian Cloth.

C. V. Hartman: Die Baumkalebasse in tropischen Amerika, ein Beitrag zur Ethnobotanik.

Friedrich Hirth: Chinese Metallic Mirrors, with Notes on some Ancient Specimens of the Musée Guimet.

Waldemar Jochelson: Kumiss Festivals of the Yakut and the Decoration of Kumiss Vessels.

Ad. F. Bandelier: La Danse des "Sicuri," des Indiens Aymará de la Bolivie.
Karl Sapper: Spiele der Kekchi-Indianer.
Zelia Nuttall: The Astronomical Methods of the Ancient Mexicans.
Eduard Seler: Eine Steinfigur aus der Sierra von Zacatlan.
Franz Heger: Verschwundene altmexikanische Kostbarkeiten des XVI. Jahrhunderts, nach urkundlichen Nachrichten.
Carl Lumholtz: The Meaning of the Head-plume Tawiákami used by the Huichol Indians.
George H. Pepper: Human Effigy Vases from Chaco Cañon, New Mexico.
George G. Heye: Ceremonial Stone Chisel from Northwestern America.
James Teit: Notes on the Tahltan Indians of British Columbia.
George A. Dorsey: A Pawnee Ritual of Instruction.
Stansbury Hagar: Cherokee Star-lore.
Harlan I. Smith: A Vast Neglected Field for Archæological Research.
Ernst Richard: The Scandinavian Theory of Indo-European Origins.
Friedrich S. Krauss: Eine Vila mit sechs Flügeln. Ein Bosnisch Guslarenlied.
William Wells Newell: Note on the Interpretation of European Song-games.
Berthold Laufer: The Bird-chariot in China and Europe.
Leo Sternberg: The Inau Cult of the Ainu.
J. D. E. Schmeltz: Ein Beitrag zum Kapitel Arbeit und Rhythmus.
Johannes Ranke: Zur Frage der Gehirnuntersuchung bei ärztlichen Sectionen.
O. Abraham und E. M. v. Hornbostel: Phonographirte Indianermelodieen aus British Columbia.
Captain George Comer: Whaling in Hudson Bay, with Notes on Southampton Island.
Captain James S. Mutch: Whaling in Ponds Bay.
Rudolf Lehmann: Poetik als Psychologie der Dichtkunst.
H. A. Andrews: Bibliography of Franz Boas.

The paper by O. Abraham and E. M. von Hornbostel gives, with critical discussion, the musical notation of forty-three songs, phonographed by Dr Boas among the Thompson River Indians of British Columbia. The difficult task of preparing the bibliography of Dr Boas was undertaken by Miss H. A. Andrews, and is a most excellent piece of work. This bibliography, which covers the quarter-century of Dr Boas' scientific and literary activity, numbers 302 titles, including book reviews and minor notes. The titles are arranged chronologically and the list is accompanied with a subject-index, facilitating reference. The volume also is provided with an adequate index. It is for sale by Messrs G. E. Stechert & Co., New York.

The Racial Derivation of the Ossetes. — In an article on this subject published in the last number of the *American Anthropologist*, Dr

Karl S. Kennard comes to the conclusion that the Ossetes are the remnant of the Alani tribe; that the latter are a tribal division of the Finns, and lastly that the Finns are a branch of the great Nordic race, whose "descendants are represented by the Lithuanians, Esths, Tschuds, and the Great and White Russians of the present time." The author bases his conclusions on the evidences presented by the physical type of the Ossetes and other Caucasian races and peoples. Inasmuch as some of the data brought forward in the article are not in agreement with observations made by anthropologists in the Caucasus, I desire to make a few corrections. The Ossetes have been thoroughly studied by several Russian anthropologists, particularly by Giltchenko, Pantukhof, Ivanowski, and Malief, and also by Chantre and Erkert. Most of that which follows is based on the writings of these authors.

The assertion made by Dr Kennard that the "ten tribal divisions [?] of importance have not blended with each other nor with other people," and that they "possess, in all its purity, that physical type known as the Alpine type," is not borne out by the facts. So far as published evidence can be considered, everything goes to prove that great diversity of physical type is observable in the Caucasus. This is best exemplified by the three main criteria of race — stature, pigmentation, and head-form. We find there short races, like the Armenians, Georgians, etc., whose height averages from 162 to 164 cm.; and the Persians, Tchetchens, Chevsurs, etc., whose average height reaches 170 cm. Between these two extremes are found other "races," like the Immers, Aïsors, Kurds, etc., who measure from 164 to 168 cm. in height. It must be mentioned also that the degree of variation of stature in each individual ethnic division is quite marked. Nearly all the inhabitants of the region are of dark complexion; there are practically no blonds to be found there, excepting among recent German colonists. The statement made by Dr Kennard that there are 30 percent of blonds among the Ossetes is also not borne out by facts observed and published. Giltchenko found only 5 percent of blonds among 200 Ossetes; and among 1,047 observations of Ossetes reported by Ivanowski, only 9 percent were blonds.

When the most stable trait — head-form — is considered, a great diversity of type is noted among the inhabitants of the Caucasus. The diversity is so pronounced and the limits of variation so extreme that there is hardly to be found anything like it in any other territory of similar limits on the globe. Extreme brachycephaly (cephalic index 87 and even more) is found among the Aïsors, Lass, Kumiks, Jews, and

others. On the other hand, dolichocephaly is observed among the Kurds, Persians, Tats, Abasdeks, etc. Between these two extremes are found many mesocephalic races, among which may be numbered the Ossetes. Riskin's measurements of 300 adult male Ossetes gave an average index of 81.46, and 60 percent of them were brachycephalic, having a cephalic index of more than 80, while only 3 percent were dolichocephalic, with an index of 75 or less. Measurements of 534 Ossetes compiled by Ivanowski show that only 2 percent were dolichocephalic, while 67 percent were brachycephalic, the average index being 81.95.

From these data it appears that "the most important fact" mentioned by Dr Kennard that "of all the population of Caucasia the Ossetes only present a deviation from the prevailing [cranial] type," and that "one of the features which distinguishes them from other inhabitants of the Caucasus is longheadedness," is by no means substantiated by measurements of the inhabitants of that region. Nor are the other physical traits which Dr Kennard attributes to the Ossetes observed with great frequency. Their nose is, according to Giltchenko and Pantukhof, mostly aquiline, often hooked, and not "straight and thin at the end"; they are not the tallest people in the Caucasus; fewer than 10 percent are blonds, as has already been shown; and they can no more be considered Teutons, or "Nordic," than the Persians, Tats, or Georgians.

Regarding the question of their derivation, several authors have considered the Ossetes to be descendants of Jewish immigrants, and some missionaries, in their assiduous search for the ten "lost" tribes, have also regarded the Ossetes as the descendants of these mysterious tribes. As a matter of fact, and excepting their inflectional language, they have physically a great deal in common with most of the other peoples of that region. Even if they are not indigenous but can be considered immigrants, time, mode of life, intermarriage, and other factors have practically amalgamated them with the rest of that *omnium gatherum* of races and languages of the Caucasus. The attempt made by Dr Kennard, as has been done already by several others, to ascribe to them a Teutonic origin can not be seriously considered even in view of his statement that, "of white complexion and yellowish hair, can it be doubted that here are described a tribe of the Nordic type?" For the Ossetes do not have yellowish hair — they are brunettes. Many races in Europe have more than 10 percent of blonds, and are not considered "Nordic." The conclusion that the Ossetes are Nordic, Finns, etc., is no more justified than would be the conclusion that the Basques, Kabyls, or others who

have a few fair-haired individuals, are Nordic; yet with the author's mode of reasoning such a conclusion can easily be reached. He says, for instance, "If all [the Ossetes] were originally blonds, how would it be possible for 70 percent [as a matter of fact more than 90 percent] to deviate from, and 30 percent to remain true to the original type? Nevertheless, we believe that this has happened." Further comment is unnecessary.

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NEW YORK CITY.

Type Ruins in the Southwest. — The fundamental idea back of the efforts to preserve the numerous prehistoric Pueblo ruins and objects found in them is their widely recognized educational value. They illustrate an ancient culture of the Southwest, and furnish data from which we can increase and diffuse knowledge of certain phases of the early history of man in America. An interpretation of the data is not possible from a superficial examination of the material, which requires long continued study, and constant reëxamination as new theories arise. To fulfill the requirements of research, archeological structures not only should be excavated with scientific care but also should be repaired and preserved for future consideration. This preservation is imperative lest important material be destroyed by those who do not appreciate its educational value. In other words, since archeological data are derived only partially from mounds of earth in which walls and minor antiquities are hidden from view, it is evident that the débris accumulated in and about the rooms, which forms the major portion of the mounds, should be removed, in order that the form, size, and general character of the concealed rooms and minor antiquities may be studied in the best possible manner. The protection of the ruins is also imperative that the data may be open to inspection. Scientific work on a ruin cannot be regarded as properly completed if this treatment be neglected, for it leads to the most important thing of all, the published report by which the acquired data are distributed among those interested and thus given their true value.

The archeological material brought to light by careful excavation is so varied and so numerous that adequate comprehension of it requires classification. A knowledge of the characteristics of each class of ruins may best be gained from a comparative study of types. On the very threshold of the classification of Southwestern ruins it is found that the characteristics of groups are largely determined by physiographic conditions. As types differ in form rather than in other features, their study is primarily mor-

phological. Thus similar physiographic characters of regions as widely separated as the Mesa Verde in southwestern Colorado and the Red Rock country in Arizona have led to the presence of the same types of ruins in these localities. For the same reason the cavate lodges in the soft tufaceous rocks of the Verde valley of Arizona reappear in similar easily eroded formations of the Pajarito plateau in New Mexico. Classification of ruins is based on form, not on geographical distribution.

The valley of the Gila river, Arizona, and the adjacent valley of its tributary, the Salt, from the mouth of the San Pedro to Gila Bend are physiographically unique and the prehistoric ruins in it are *sui generis*. The best preserved of all the ruins in this area is called Casa Grande, situated a few miles west of Florence and a short distance south of the Gila river. It is a typical representative of the many prehistoric ruins in this instructive region. An appropriation by Congress of $3000.00, available in 1906–'07 to repair and protect this building, made it possible for the Smithsonian Institution to begin operations, which, when completed, will make this a "type ruin" illustrating prehistoric Gila culture. This work, as yet unfinished, will be resumed this winter under a new appropriation. It is anticipated that the type ruin will be completed at Casa Grande in the spring of 1908.

This is not the place to do more than to mention the progress already made, and it would be premature to predict results of phases of the work not yet undertaken. An official account of the archeological operations at Casa Grande during last winter is published in the current volume of the quarterly issue of the *Smithsonian Miscellaneous Collections*.

The type of a prehistoric Gila settlement as revealed by excavations is a rectangular walled enclosure containing buildings of one or more stories each, courts and plazas. Some of these buildings adjoin the surrounding wall, while others are detached. The main building, called Casa Grande, was formerly four stories high in the center, and three stories on each of the four sides, but the lowest story of each tier was filled solid with earth, so that the central enclosure had three rooms, one above the other, and each of the other two rooms similarly arranged. One entered the lower room by the side on a level through external doorways that formerly opened on a terrace, or roof of surrounding rooms. About three-fifths of the excavation and removal of earth from this enclosure have already been finished. It is evident that considerable work is still necessary to complete the excavation and repair of this enclosure, but that done thus far is sufficient to afford an idea of a typical Gila Valley ruin and to make plain the fact that the experiment of devel-

oping a type ruin to illustrate the prehistoric culture of one area of the Southwest is well under way and may be finished at the close of another season's field work. J. WALTER FEWKES.

A White Man's Stone Cairn. — The note-books and collections of the late Honorable J. V. Brower having been placed in my custody by the Minnesota Historical Society, I have found, amongst other interesting materials, an account of a monument erected in the form of a low cairn of loose stones at the grave of a white man in North Dakota. By a person unacquainted with the facts, this pile of stones might easily be mistaken for a work of the aborigines.



FIG. 38. — Dr Weiser's Grave, Kidder county, North Dakota.

Mr Brower belonged to Company D of the First Minnesota Mounted Rangers, in 1863, who, under Col. Samuel McPhail, engaged in the expedition against the Sioux after the celebrated "Indian Massacre" in Minnesota. A battle occurred at a point thirteen miles northeast of Dawson, North Dakota, July 24, 1863. The first man to fall in the preliminary skirmish was the surgeon, Dr Josiah S. Weiser, a comrade of Mr Brower. It was subsequently known as the "Battle of Big Mound."

Dr Weiser was buried on the spot, and his grave temporarily marked, according to a letter from Colonel McPhail, "by three picket pins in a triangle, 12 inches apart, set at six feet south from the spot of burial, and extending four inches above the ground. "Subsequently, after 35 years of neglect, in 1898. search was made for Dr Weiser's grave by Mr Brower in order to mark it more permanently. He did not find the picket pins, nor any spot resembling the grave; but he "gathered up a quantity of large and small bowlders in the northwest corner of the camp [Goodell] and at the point indicated by Colonel McPhail by blue cross [on a plot submitted by Brower], erected a small mound of earth and stone and placed a marble slab at a long rifle pit." A field-sketch of this by Mr Brower gives dimensions of the mound covered by bowlders, as 8 feet by 6 feet and 3 feet high, elongated east and west, a small marble slab lying flat in the center on the top, on which were engraved the words "DR. JOSIAH S. WEISER 1863."

The accompanying photographic view, by Mr Brower, was labeled by him: *Dr. Weiser's Grave, Kidder Co., North Dakota.* In the view the marble slab is invisible, indicating that it was small. By this time it may have been removed, and the group of stones might be considered the work of the aborigines. Numerous stone cairns, well known to be of aboriginal origin, at the present time are mere groups of stones that show little evidence of the purpose for which they were gathered.

N. H. WINCHELL.

W. W. Newell and the Lyrics of Li-T'ai-Po. — In Dr Chamberlain's bibliography of the late W. W. Newell, given in the last number of the *American Anthropologist*, I miss one of Mr Newell's last and most interesting works which, however, has unfortunately not been given to the public. This little volume bears the title "Lyrics of Li-T'ai-Po [Chinese Poet of the Eighth Century] by Michitaro Hisa and William Wells Newell (Printed Not Published)," xiv, 62 pp. The preface is dated "Wayland, Mass., August, 1905," and in it the origin of the book is set forth. Michitaro Hisa, a Japanese student at Harvard from 1891 to 1895, later professor of economics at Kioto (died 1902), became a close friend and frequent visitor in the family of Mr Newell, and, in response to inquiries concerning Chinese poetry, brought him translations from several authors; among these, Mr Newell was especially interested in versions of Li-T'ai-Po, the greatest and most original poetical genius of China. The literal prose renderings of Hisa, following character by character the Chinese text, were brought into metrical form by Newell

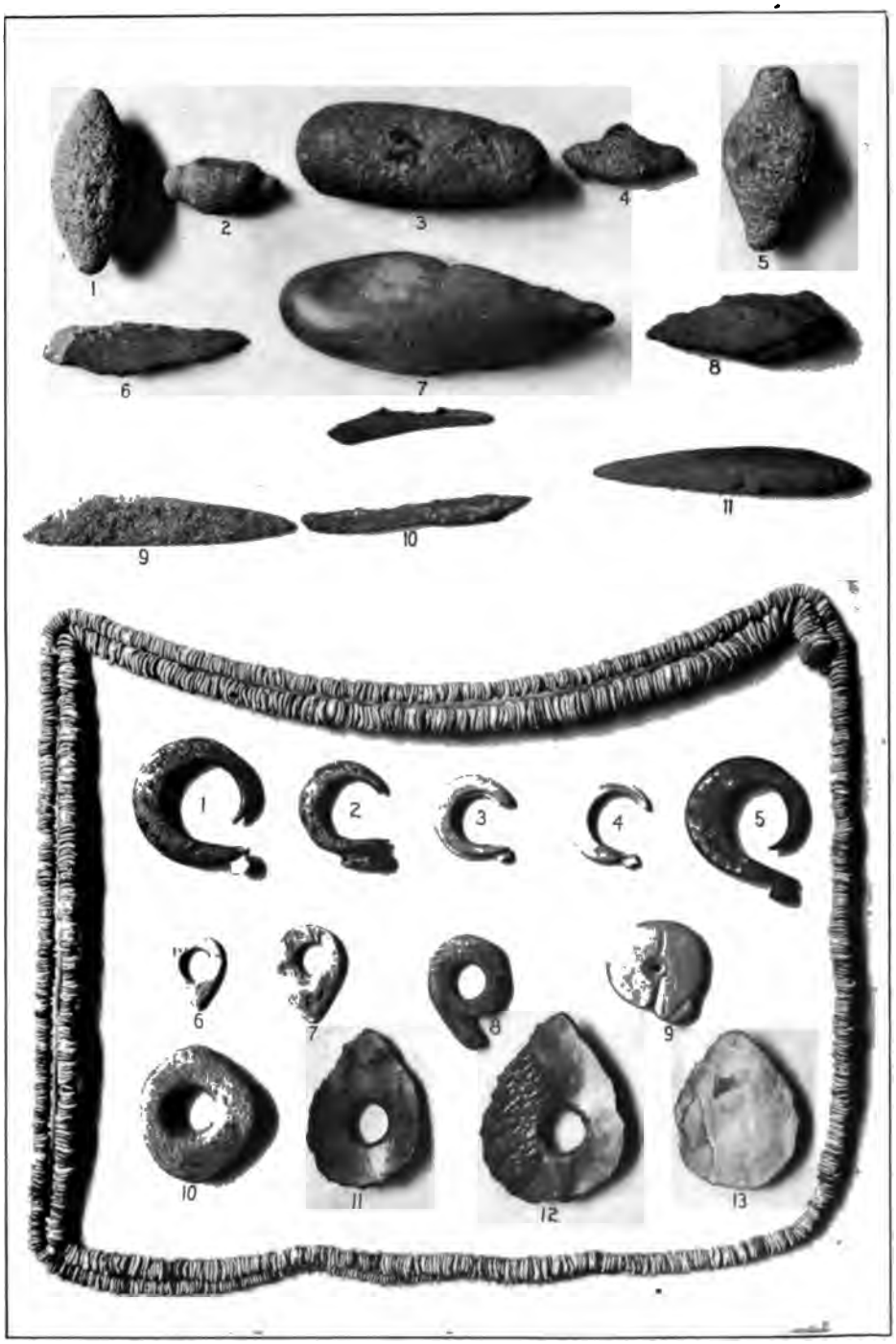
who made it his first object to reproduce sentiment and language as closely as possible. "The results," Mr Newell says, "were shown to Hisa who furnished advice and suggestions; in this manner came into being the verses here printed, not for circulation or public notice, but for the sake of record, and as memorial of a friend whose delicate perception and deeply poetical spirit are mainly responsible for their existence, but who will never look upon their permanent form." Last Christmas, when Mr Newell attended the meeting of the American Anthropological Association at New York, he was good enough to present me with a copy of this book and to ask my judgment of it. I was just going to submit to him a plan for its publication, when the sad news of his death came. I have compared with the original text several of the twenty-six poems here selected, and in my estimation the translation is admirable and even unique. The few existing translations of some of Li-T'ai-Po's poetry in French and English give at least a mere circumstantial paraphrase of the text, while Mr Newell's rendering, in the epigrammatic terseness of its style, gives an excellent reproduction of the true spirit of the original. If there are in existence more copies of the book, which I am told Mr Newell printed with his own hands, they should certainly be circulated.

BERTHOLD LAUFER.

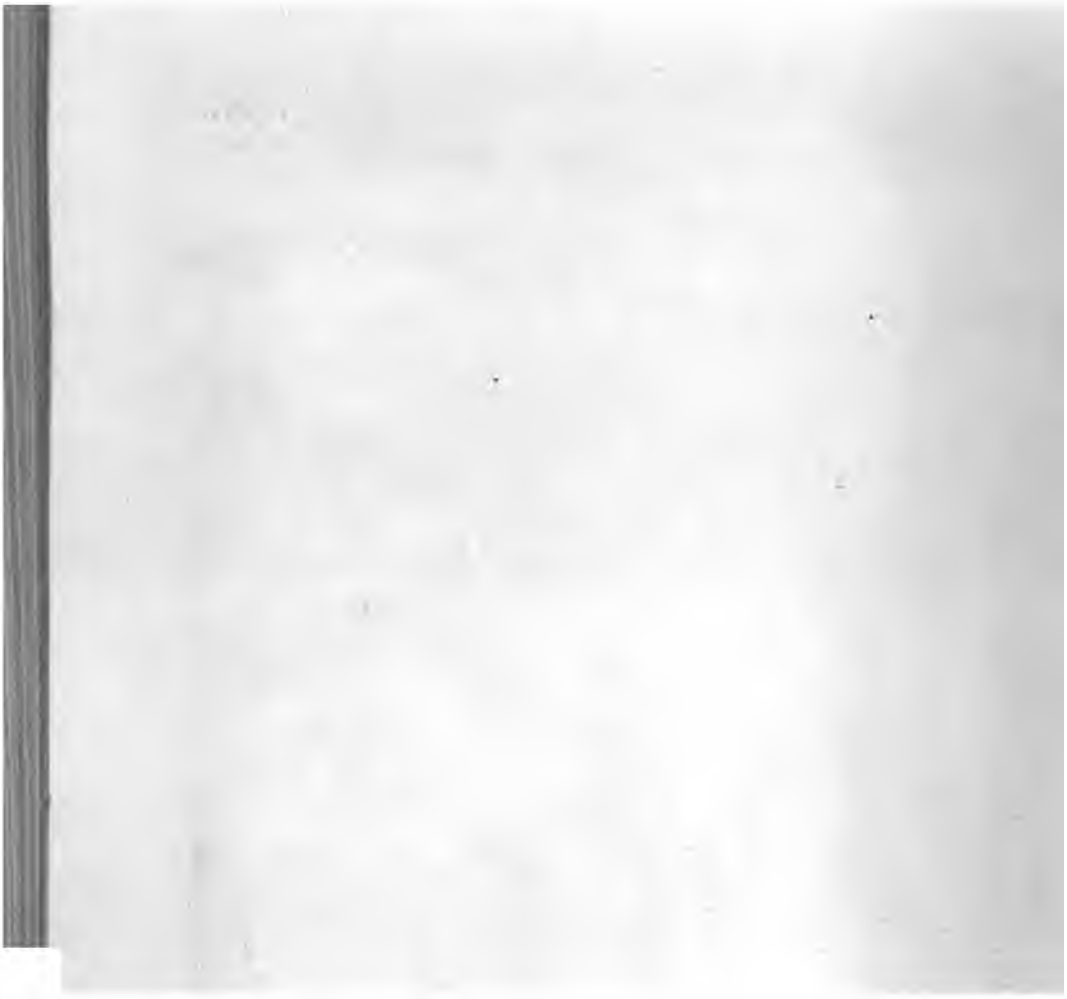
Archeological Collections from San Miguel Island, California. — A series of specimens of bone, stone, and shell artifacts, obtained from ancient graves on the island of San Miguel, off the coast of Santa Barbara county, California, is shown in the accompanying plates. The data and photographs were furnished by the late Horatio N. Rust of Pasadena, California.

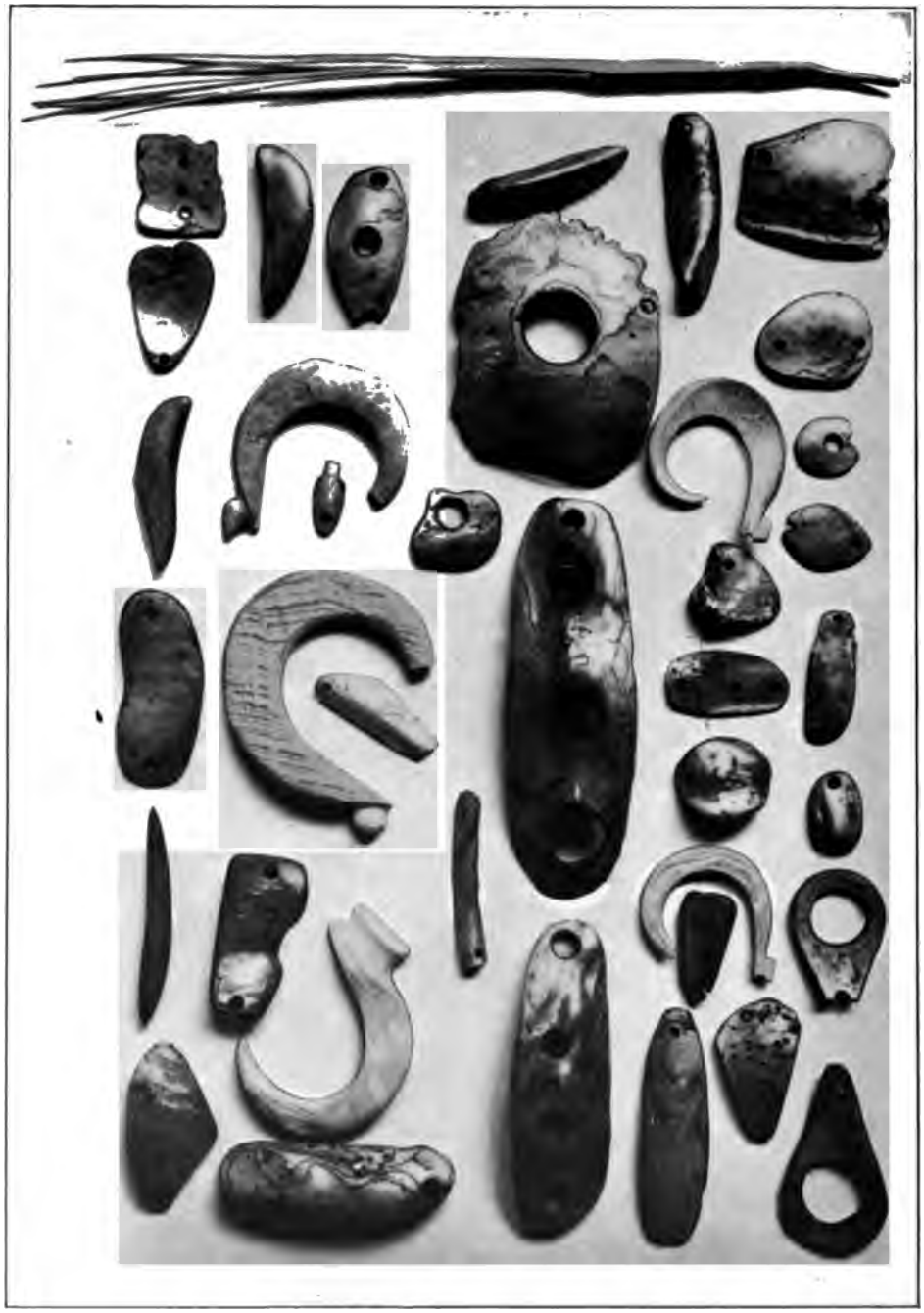
Plate XXXI, nos. 6, 7, and 8, illustrate small stone picks used in roughing-out the objects of shell and especially in making the perforations which were afterward to be enlarged and rendered symmetrical by the sandstone drills shown in nos. 1–5. Nos. 9–12 are supposed to be abrading stones and to have been used in giving the final shape to the various implements of shell and bone.

No. 1 of the lower half of the same plate represents a piece of shell formed by the stone pick referred to above and is ready for perforation. Nos. 2 and 3 are of shell, and show the use of the pick and drill. No. 4 is of stone. Nos. 5 and 6 indicate the use both of the drill and the abrading implement. Nos. 9–13 have been further elaborated with the latter implements. These hook-like objects have generally been classed as fish-hooks, but were regarded by Mr Rust as ornaments. He conceived that they may have served as a means of holding or attaching strings of beads or other pendant objects.

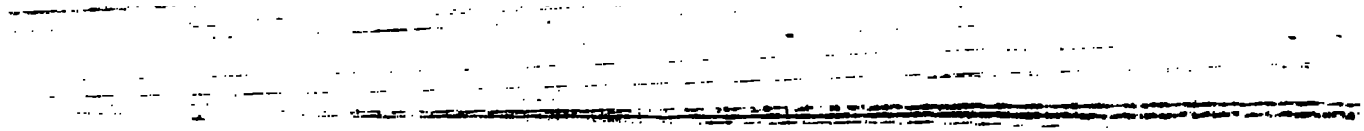


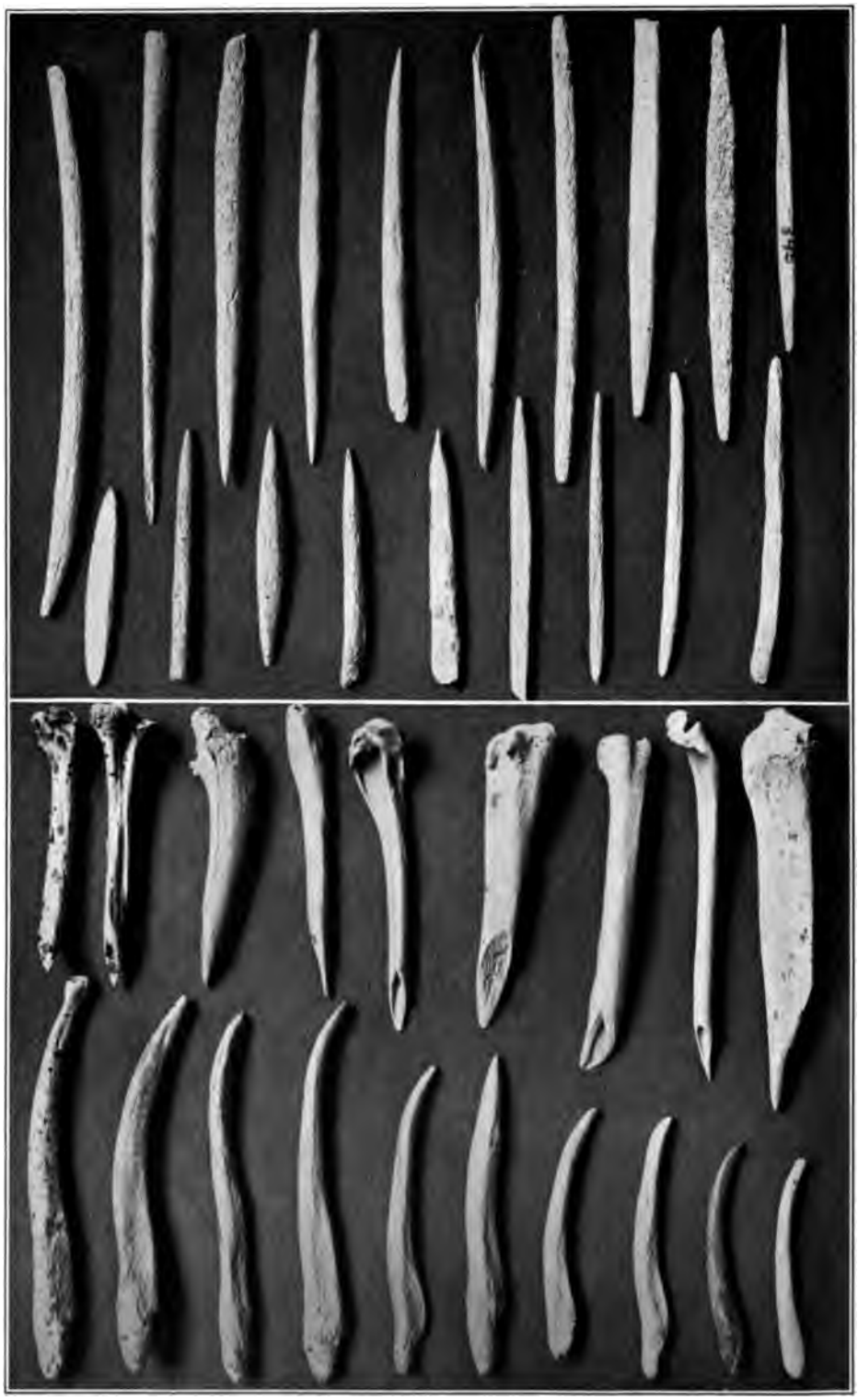
STONE AND SHELL OBJECTS FROM SAN MIGUEL ISLAND, CALIFORNIA





COLLECTIONS FROM SAN MIGUEL ISLAND, CALIFORNIA





BONE IMPLEMENTS FROM SAN MIGUEL ISLAND, CALIFORNIA



The string of shell beads illustrates the use of a small drill in making the perforations and the custom of grinding the beads to a uniform size by rubbing them, while closely packed on the string, upon a stone, the process being aided by the use of sand and water.

The objects shown in plate XXXII, most of which are personal ornaments, serve to illustrate the results produced by the use of the stone implements shown in plate XXXI. At the top of the plate is seen a number of the whiskers of the seal found associated with the stone implements.

The objects shown in the upper half of plate XXXIII represent a form of bone implement quite common on San Miguel island. It is supposed that they may have been used as drills, with sand and water, for piercing the various objects of shell.

The lower part of the same plate illustrates two series of perforating implements, those on the left made from the bones of the seal, and those on the right largely from bones of birds.

Area of the Base of Cahokia Mound. — Dr Cyrus Thomas, in an article on "Cahokia or Monk's Mound" published in the last number of this journal, quoted the dimensions of the mound as I gave them in a paper published some three years ago.[1] It is evident however that my statements were not sufficiently clear and that Dr Thomas has not understood how I reached certain conclusions. As I stated at that time, "the dimensions of its base are: from north to south, 1,080 feet, from east to west, 710 feet. The area of base is about 16 acres." Dr Thomas has rightly observed that an area 1,080 by 710 feet would include about 17.5 acres; but such is not the area of the base of Cahokia. A rough outline of the base of the mound is shown in the accompanying figure; it is however sufficiently accurate to serve our purpose at the present time.

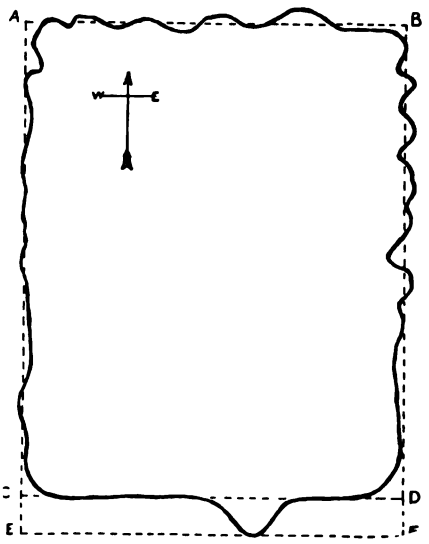


FIG. 39. — Outline of Base of Cahokia Mound.

[1] Cahokia and Surrounding Mound Groups, *Peabody Museum Papers*, III, no. 1, 1904.

In giving the total length of the artificial work I of course included the length of the graded way, or projection, from the south end, which is about 80 feet. Now, if that is deducted from the total length, the dimensions of the base A, B, C, D, would be 1,000 by 710 feet; or 710,000 square feet. Adding to this the approximate area of the base of the projection, south of line C, D, which is 3,200 square feet, we have the area of the base of Cahokia 713,200 square feet, or about 16.3 acres; but from this we should make a slight deduction for the curved corners C and D, which would reduce the actual area of the base to about 16 acres, as I previously stated. DAVID I. BUSHNELL, JR.

The Gaelic Society of Washington has been organized for the purpose of cultivating and disseminating a knowledge of the language, literature, music, art, and history of the Irish and other Gaelic peoples and their kindred of the Celtic stock in every part of the world, "in order that the race may better value its own heritage, and that the Celtic contribution to the world's civilization may be more fully understood and appreciated." To promote this purpose it has been arranged to hold regular monthly meetings through the winter season for the reading and discussion of papers and the rendition of characteristic vocal and instrumental music. The subject-matter will range from folk-lore to history and ethnology, with special attention to the achievement and condition of the Celtic race in America. It is hoped ultimately to establish a library and art collection, with provision for appropriate lectures, classes, entertainments, and publication. For convenient operation the work has been classified in sections, each in charge of a vice-president, as follows: Gaelic Language; Celtic Ethnology; History; Literature and Art; Music; Resources and Development; Greater Ireland. Recognizing language as the basis of the literature, music, historical study, and racial identity of a people, every practicable attention and encouragement will be given to the Gaelic and cognate languages. The opening meeting was held October 9th, when Rev. Thomas J. Shahan, of the Catholic University of America, addressed the Society on "The World's Debt to the Celt." The program included also an address in Gaelic, and songs in the same language by representatives of both the Irish and the Scottish Gael.

Moscow Institute of Archeology and Archeography. — *Nature* states that private enterprise has succeeded in founding, with the sanction of the Ministry of Education, confirmed by the Czar, an Institute of Archeology and Archeography in Moscow. The Institute, which has

just obtained its charter, ranks with a university, and is open to all graduates of Russian or foreign universities. Its aim is to prepare qualified archeologists and "archeographists." The latter term is applied to persons skilled in the preservation and use of historical archives, libraries, museums and other collections, public and private, demanding special knowledge. The Moscow Institute of Archeology is the first institution in Russia founded on autonomous principles; it has the right to elect its own staff of professors, and generally to conduct its own internal affairs, subject only to a possible veto of the Minister of Education in certain cases. The course is a three years' one, the final year of which must be spent in practical work either in archeological expeditions and research among the monuments of antiquity as yet so little studied in Russia, or in similar special work at home or abroad. The institute grants the degree of doctor of archeology or archeography. Among those connected with the new Institute whose names are favorably known outside Russia may be mentioned Dr Uspensky, director of the Institute, the author of fifty capital monographs in Russian; Dr Fleischer, who was associated with English and American archeologists in recent excavations in Persia; Professor Grot, and other Moscow professors. Docent Visotsky has been appointed secretary to the Institute.

British Association — Anthropology. — At the recent Leicester meeting of the British Association for the Advancement of Science, the following grants were made to Section H (Anthropology): Glastonbury lake village, £30; excavations on Roman sites in Britain, £15; anthropometric investigations, £13; age of stone circles, £53; anthropological photographs, £3; anthropological notes and queries, £40. Section H having passed a resolution to the effect "That the council of the British Association be asked to impress upon His Majesty's government the desirability of appointing an inspector of ancient monuments, fully qualified to perform the duties of his office, with full powers under the act, and with instructions to report periodically on his work, with a view to publication," the council appointed a committee consisting of Sir John Evans, K.C.B., Sir Edward Brabrook, Mr E. Sidney Hartland, Sir Norman Lockyer, K.C.B., and Lord Balcarres, to report on the proposal; and the report of the committee, having been approved by the council, was sent with a covering letter to the prime minister on December 19, 1906. The president also attached his signature to a memorial on the same subject drawn up by the council of the Society of Antiquaries. It is understood that, whilst no immediate action will be taken by the

the thirteenth century, it will contain codices and chronicles of the Order, bibliography, literary comment, etc. Father Dionysius Schuler, of the Collegio S. Antonii at Rome, is the director of the periodical, which will be published by the Quaracchi Press, Florence.

THE BROCA PRIZE of the Society of Anthropology of Paris has been awarded this year to M. Lapicque for his manuscript titled "Investigation of the Negro Races." The value of the prize is 1,500 francs, of which amount M. Lapicque receives 1,200 francs. A Broca medal and 300 francs, with honorable mention, have been awarded to M. Chaquet for his manuscript memoir on "The Teeth According to Sex and Race"; and a Broca medal, with honorable mention, to E. Fisher for a research on "The Variations of the Human Radius and Ulna."

MR EDWARD SAPIR, recently appointed research assistant in the department of anthropology of the University of California, has returned from a two-months' trip to Shasta county, where he has been engaged in researches in the ethnology and philology of the Yana Indians. Mr Sapir has brought back valuable information respecting the structure of the Yana language, which he is now about to prepare for publication.

DR A. VAN GENNEP is the editor of *La Revue des Études Ethnographiques et Sociologiques*, a new monthly about to be published by Paul Geuthner, 68 Rue Mazarine, Paris. The foreign subscription will be 22 francs.

PROFESSOR S. ZABOROWSKI, professor of ethnology in the School of Anthropology at Paris, has been elected president of the Anthropological Society of Paris.

WE REGRET to record the death of Dr Daniel García of the Hospital Militar, Guadalajara, Mexico, a member of the American Anthropological Association.

MR FRANK G. SPECK has been appointed to the department of ethnology of the Free Museum of Science and Art of the University of Pennsylvania.

American Anthropologist

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NUMERAL SYSTEMS OF THE LANGUAGES OF CALIFORNIA

BY ROLAND B. DIXON AND A. L. KROEBER

In examining the tables of numerals from Californian languages which constitute this contribution, it must be borne in mind that they belong to more than twenty different linguistic families. After this fact is taken into consideration as regards their lack of uniformity, there still remain great discrepancies between the numerals of dialects and languages belonging to one family. It is especially striking that these differences within a family are often not so much phonetic or dialectic as due to a different radical derivation of the numerals. When it is remembered how uniformly the same radicals appear, throughout the great Indo-European family, in languages that are not only mutually unintelligible, but so different that their common origin would not be suspected but for study, the frequency with which, in California, languages that the Indians recognize as akin and which are in part mutually intelligible, show three or four or more radical differences in their first ten numerals, is a remarkable feature of these numeral systems.

This diversity is due to the nature of the formation of the numerals. In the languages of civilization the radicals of numeral words up to ten are meaningless save for their numerical significance; the same is true of the higher units of counting, and all the remaining words are formed directly from combinations of these without the use of nouns or verbs. In the languages of the California Indians most of the numerals above ten, and many of those above five, are not radicals but derivative words. These derivative words are partly arithmetical, as two-two for four; partly composite words, like fin-

ished-hand for five, denoting objects or actions expressive of the process of counting. The expression by numerals of an arithmetical process is not foreign to Indo-European, and obviously can be absent from no language; thirteen, seventy-one, two hundred and five, as much as undeviginti, and quatre-vingt-dix-sept, are based altogether on a few primary radicals and on mathematical processes. The difference between our languages and those of the California Indians is that we restrict such descriptive terms to the numbers above ten and do not in the formation of the derived words depart from abstract mathematical processes; whereas they begin mathematical operations not infrequently with so low a number as four, and in many cases cling to concrete arithmetical operations in their counting.

While both these characteristics, compound numerals for very low numbers, and the use of words denoting visible things or acts to express them, are often accompanied by an unpracticed counting sense, this is not the case among the California Indians. The Australians and South Americans who count 1, 2, 2-1, 2-2, 2-2-1, or 1, 2, 3, 2-2, 3-2, for obvious reasons do not continue this method very far. Every Californian language of which anything can as yet be positively said in this respect, counted into the hundreds when desired, though it does not follow from this, as Conant has pointed out as a general fact among primitive people, that such ability to form and use comparatively high numbers carries with it a very definite idea of these numbers as such. However primitive numerical processes were in California, they were not rudimentary.

The following are the processes that exist in the numeral systems of California:

Quinary. — This fundamental process is common in California, but cannot be said to predominate. Two phases of it must be distinguished. First, and less distinctive, the quinary process below ten only, the numerals from six to nine being formed on a quinary basis, but those from ten to twenty being formed from those below ten added directly to the word for ten or an equivalent; so that from ten on a decimal method replaces the quinary. Second is a form of the quinary process continued to twenty, or even above; five, ten, fifteen, and twenty serving as the bases from which the

intervening numerals are formed either by addition or subtraction. This method, which is shown by Nahuatl and Eskimo, is the most complete type of quinary numeration. In cases where the numbers

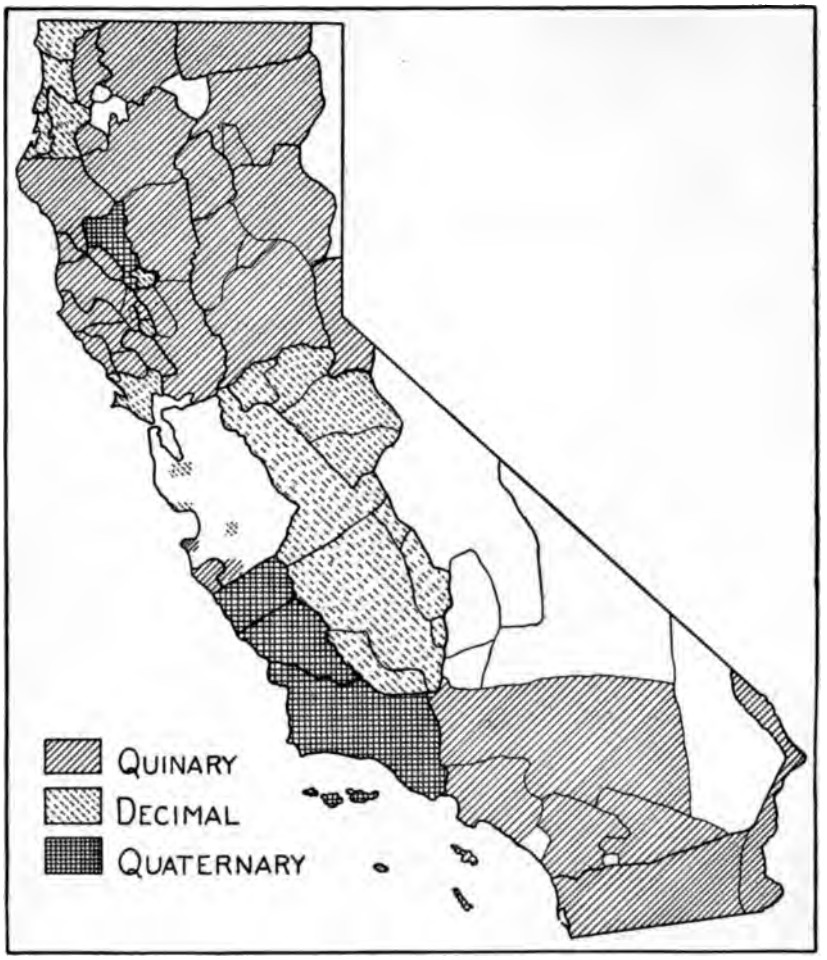


FIG. 40. — Distribution of Methods of Counting from One to Ten in California.

above twenty appear not to have been much used, or where other causes were operative, as in certain Californian languages, the method of counting by fives is carried on indefinitely until it becomes too cumbersome; but more frequently twenty is taken as the unit of the

next higher order and the well-known quinary-vigesimal system results.

Decimal. — From the nature of things the decimal system is farther removed from concrete groupings, or other tangible or dynamic operations in counting, than the quinary. It must not be supposed however, from analogy with our own tongues, that the numerals of Californian decimal systems are always irresolvable radicals. There are enough other mathematical processes besides the quinary used by the California Indians to make it possible for many of the numerals below ten to be derivative words with ascertainable meaning. Even where no mathematical process is employed, the numerals may be descriptive of some circumstance attending the habitual method of counting. Thus in Yurok seven, which would fall on the index finger as the Indians count on their fingers, is derived from the verbal root denoting pointing, which gives name to the index finger; and eight from the word long, from which the middle finger is named.

As in the case of the quinary system, the decimal method must be separately considered below ten, from ten to twenty, and above twenty. A few Californian languages show a decimal system throughout, even to being based on hundreds from one hundred up; but not infrequently an otherwise decimal system is quinary below ten. Sometimes a decimal system changes above twenty to a vigesimal one, for which an analogy is not far distant in French. That a system whose numerals to ten are purely decimal — unanalyzable — should from ten to twenty follow the quinary method, seems almost incredible; yet such is the case in certain Miwok or Moquelumnan dialects, though it is fair to add that the quinary method is so far crystallized in these higher numerals that the etymology of the words can scarcely be evident to the Indians without deliberate reflection.

Vigesimal. — Counting by twenties from twenty to one hundred is rarer in California than counting by tens. Sometimes it appears as a continuation of a quinary method, sometimes it is imposed on a decimal system. It should be noted that the tens between the twenties may be formed by two methods, either by addition to the preceding twenty, or by subtraction from the following one: fifty

being forty-plus-ten or sixty-less-ten. The method by subtraction is confined to a small continuous area, occupied by parts of three different linguistic stocks in the north-central part of the state, Northwestern Maidu, Southern Wintun, and several Pomo divisions.

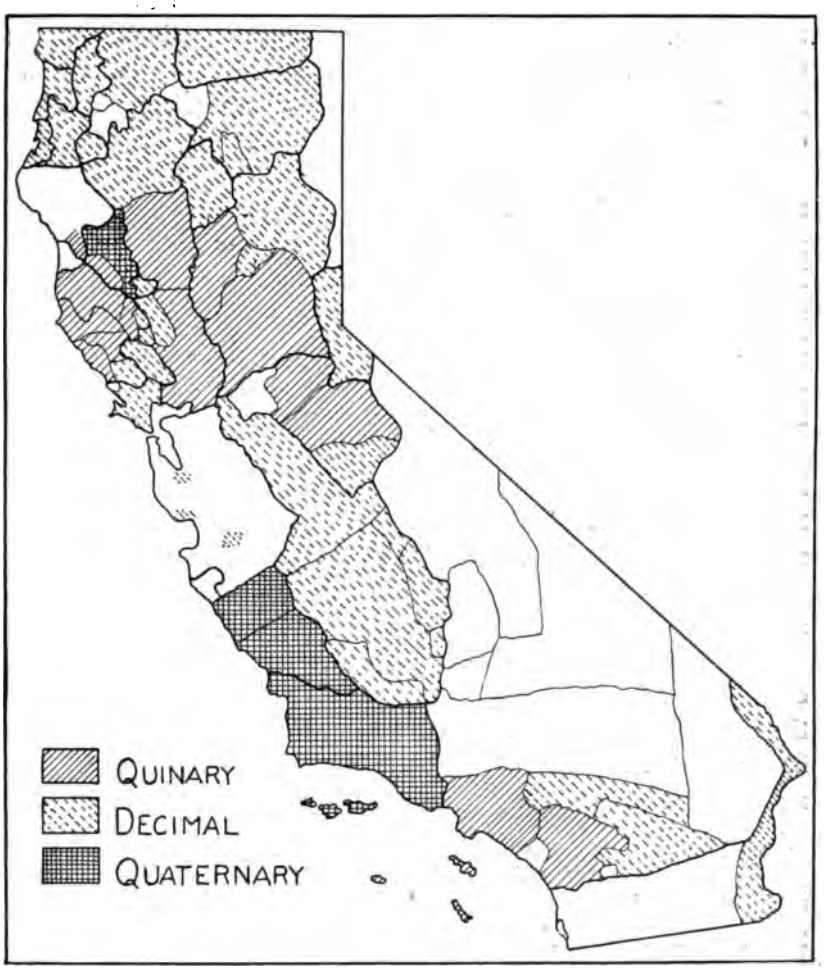


FIG. 41. — Distribution of Methods of Counting from Ten to Twenty in California.

Quaternary. — Counting by fours is a striking feature of Californian languages, which was already commented on by Duflot de Mofras. It is probably not connected to any extent with ritualism,

for while four is the ceremonial number of a great part of the state, the California Indians are distinctly unritualistic. Some trace of this method is found in many of the linguistic families in the state. Often it takes only the form of a derivation of eight from four, which may be regarded as due either to a multiplicative process or a quaternary one. Two groups however show this process in fuller form: Chumash and Salinan, and one dialect of Yuki. The latter is absolutely quaternary, there being no trace of any quinary, decimal, or vigesimal method in any part of the system.

This extreme quaternary system will be found in the table under the heading Yuki proper. The old man from whom the numerals were mainly obtained was asked if he knew how many fingers he had. He answered without hesitation, *hutcamopesul*, ten. He was asked how many fingers and toes he had, and said he did not know. Two pairs of hands were spread on the ground in front of him and he was asked to count the fingers on them. He proceeded to push the fingers aside one by one, grouping them by fours, and pausing after eight and sixteen. One thumb having been overlooked, he made the total *molmihuipoi*, nineteen, and announced that as the result. This incident is told not to show the feeble arithmetical powers of the Yuki, for the old man's error was due no doubt to his being unaccustomed to count other people's fingers, and had he been allowed to operate, as habitually, with sticks, the mistake would probably not have occurred; but to illustrate how completely this system, many of whose terms do have reference to the fingers, departs from the common primitive quinary-vigesimal finger-and-toe counting method, and is purely quaternary. It does not follow that because people count by their fingers they count by fives.

Multiplication. — The most common form of this method of making numerals is the duplicative. Six is occasionally formed from three, as in Wintun, Yana, and Salinan; four more frequently from two; and eight in many cases from four or two. Many families show one of these phenomena in one or more of their dialects. Duplication is not however the only multiplicative method. Three-four for twelve, and three-five for fifteen are found in certain Wintun, Salinan, Chumash, and Shoshonean dialects.

Addition and Subtraction. — In a measure a cross-classification is made by the introduction of these methods (as by that of the multiplicative), since no system can be built up to reach any higher designations without them, and as quinary systems mainly depend

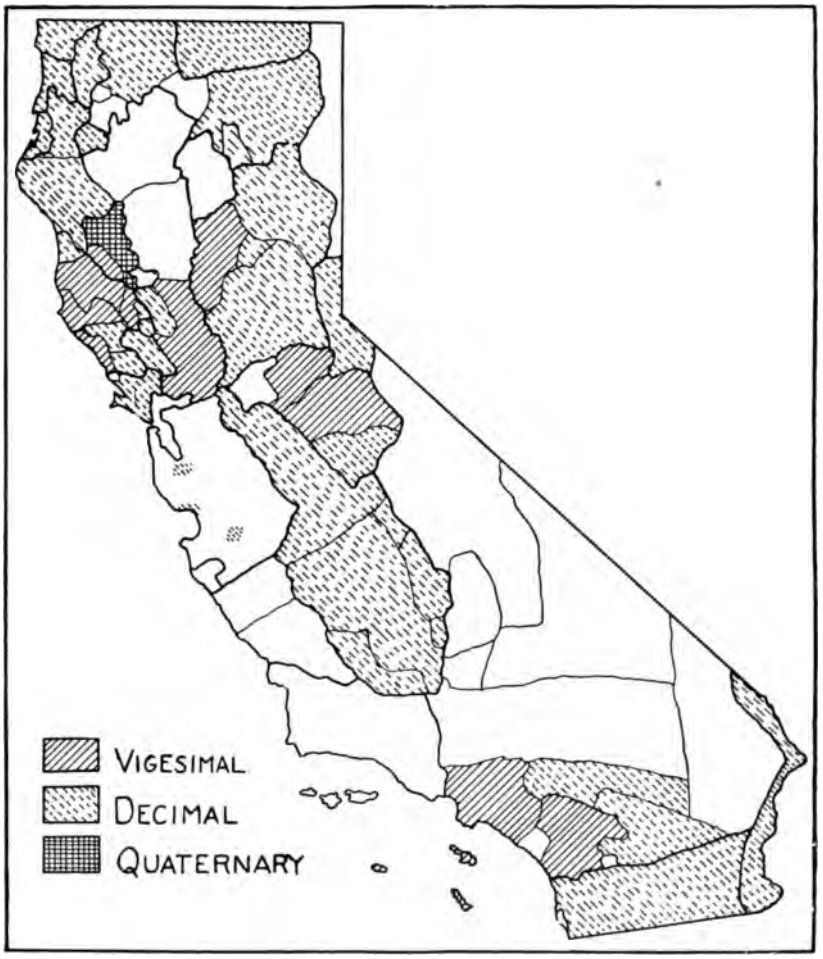


FIG. 42. — Distribution of Methods of Counting from Twenty up in California.

on addition and subtraction for the numbers between six and nine. These methods are mentioned here only to call attention to the fact that both of them occur, subtraction naturally most frequently in the case of nine, fourteen, and nineteen.

Analogy. — A principle which by itself can scarcely be considered as formative of numeral words, but which undoubtedly influences them, is that of phonetic analogy. It is to be expected that succeeding numerals will be similar in sound even more often among uncivilized people where consecutive counting is frequent, than under conditions of culture where mathematical operations have largely supplanted this. In California phonetic analogy is very frequent. Both the beginning and end of words exhibit the phenomenon. In the great majority of cases the analogy occurs between two and three, to which circumstance parallels can be found in other American languages, and in fact in those which people of European civilization speak. Shoshonean, Yurok, Shastan, Chimariko, Pomo, Wishosk, Washo, Esselen, Wappo Yuki, Athabascan, Yuman, and Wintun each shows a resemblance between its forms for two and three.

The nature and causes of the diversity of the numeral systems are shown plainly in the table of four Yuki dialects. With one exception the numerals up to three are sprung from the same radicals in the several Yuki dialects. From four on they differ completely and are all obviously composite. In many cases the meaning of the compositions is clear, though their force or origin may not always be so evident; in other cases it is at least certain that the words are composite, practically all Yuki radicals being monosyllabic. While one of the four systems is quaternary, two others are quinary-decimal, and the fourth is quinary-vigesimal. In addition to the difference in general method, the actual significance of each of the numerals, the actions or objects referred to, are almost invariably different through the four dialects.

It has sometimes been assumed that there exist on the one hand a quinary-vigesimal method of counting and on the other a decimal one. Some authors have not hesitated to class certain languages, of which only the numerals up to ten were known, as "quinary-vigesimal," because up to ten they are quinary. The material presented in the accompanying tables, as well as the maps, show that such an assumption cannot be made too cautiously. Decimal systems change to vigesimal above twenty (Miwok) and to quinary between ten and twenty (Miwok), and quinary systems fre-

quently are purely decimal from ten up (Shasta, Yana, etc.). In the material here presented there are more cases of a quinary system changing to a decimal or a decimal to a vigesimal, than of a quinary becoming vigesimal or a decimal remaining decimal. To be sure these facts relate only to California, and it can scarcely be doubted that, the world over, for reasons that are obvious, the quinary and vigesimal methods are probably more often associated with each other than with the decimal. But it is clear that such an association must be regarded as at most a general tendency, never as an a priori fact.

The accompanying maps showing the geographical distribution by linguistic families of the various methods of numeral formation, sum up the material collected and the generalizations stated. They are in no need of a commentary beyond a notice of the extent to which the principle of territorial continuity of characteristics obtains. While diversity and irregularity seem the chief features of the maps, yet the areas in which similar numeral methods occur are not randomly scattered, but with few exceptions are geographically continuous. This makes it clear that, with but little borrowing of specific words distinct families have considerably influenced each other as regards their processes of numeral formation.

The numerical systems of North America as a whole may also be briefly referred to. For the numerals below ten, the various linguistic stocks are about evenly divided territorially, roughly half the area of the continent being characterized by the use of the decimal method, and half by the use of the quinary system, although in a number of cases where the decimal system prevails it is not pure, but shows more or less multiplication and subtraction. For numerals above ten, on the other hand, the decimal system, generally pretty pure, occurs in the enormous majority of cases, covering the entire continent with the exception of parts of California and Mexico, the Eskimo area, and the sections occupied by the various members of the Caddoan stock. Only in these few areas does no trace of the decimal system exist above ten. At a number of points on the Northwest coast a quinary system somewhat mixed with decimal occurs.

Mexico is noteworthy for practically not possessing a single native language showing the decimal system either below or above ten.

Consistent or thorough decimal systems, where all the numerals, both below and above ten, are on this basis, cover very large areas, including the regions occupied by the large and important Siouan, Athabascan, Shoshonean, Iroquoian, and Salish stocks. This area is in the main that of the central portion of the continent, and it extends to the Pacific coast in only one or two places.

As contrasted with the wide extension of thorough decimal systems, consistent quinary-vigesimal systems occur but rarely. Outside of Mexico, they are to be found only among the Caddoan tribes, the Eskimo, and in parts of California.

It follows then that the decimal system is, in whole or in part, the predominant system throughout most of North America. The strength of the general tendency toward the decimal basis is shown by the fact that not only do systems which start decimally continue on that basis throughout, but also that those which initially are quinary, in most cases shift above ten to the decimal method. In this connection lies one of the most striking evidences of the variety which obtains in California, for not only do there occur within the area of the state all the general variations in numeral systems which are to be found in the entire remainder of the continent, but there exist also systems found nowhere else in North America, namely those initially decimal but changing in the higher numbers to quinary, and those quaternary throughout.

Altogether it would appear that numerals occupy a very different place in Californian languages from their philological position in Indo-European and other great linguistic families of the old world, and that on the whole they cannot be given the importance in comparison and in questions of determination of genetic relationship, that they occupy in these languages.

	Lutuami[9]	*Athabascan*[3] *Tolowa*	*Athabascan Hupa*	*Athabascan Kato*
1	nac, nas	La	La	Laxa
2	lap	nax	nax	naka
3	ndan	tak	tak	tak
4	unip	dintce	diñk	naka-naka
5	tunip	cwela	tcwola	lasane
6	nas-ksapt	kostanne	xostan	bûn-Laxa
7	lap-ksapt	tcete	xokit	bûn-naka
8	ndan-ksap	lanisût	kenim	bûn-tak
9	nas-xeks	La-ûndui	mûkkostan	bûn-nakanaka
10	te-unip	nesûn	minLûñ	laL-baûñ
11	taunep-anta nas[9]	La-tcata	minLûñ muwa na-La	laLbaûñ-biL-Laxa
12	taunep-anta lap	nax-a-tcata	minLûñ muwa na-nax	laLbaûñ-biL-naka
13	etc. regularly to 19	tak-tcata		laLbaûñ-biL-tak
14		dintce-tcata		laLbaûñ-biL-nakanaka
15		cwela-tcata		laLbaûñ-biL-lasane
16		kostanne-tcata		laLsane-biL-Laxa
17		istcete-tcata		laLsane-biL-naka
18		nax duxonni-tcata		laLsane-biL-tak
19		Laundui-tcata		laLsane-biL-nakanaka
20	lap-eni taunep[9]	na-de-nesûn	na-dim minLûñ	naka-dûñ-laLbaûñ
21	lap-'ni taunep-anta lap	na-de-nesûn-La-tcata		naka-dûñ-laLbaûñ-biL-Laxa
30	nda-ni taunep	tak-nesûn	tak-ûtdim-min Lûñ	tak-dûñ-laLbaûñ
40	wunep-ni taunep	dintce-nesûn	diñk-itdim-minLûñ	nakanaka-dûñ-laLbaûñ
50	etc. regularly to 90	cwela-nesûn	tcwola-dim-minLûñ	lasane-dûñ-laLbaûñ
60			xostûn-dim-minLûñ	bûnLa-dûñ-laLbaûñ
70			xokit-dim-minLûñ	
80			kenim-dim-minLûñ	
90			mûkkosta-dim-minlûñ	
100	taunep-ni taunep	La-atcûn	La-it-dikkin	
200	lap-eni taunep-ni taunep	na-din-La-atcûn	nax-ût-dikkin	

	Karok[1]	*Yurok*[2]	*Wishosk*	*Chimariko*
1	yisa	qore[u]	kotser	p'un
2	axak	niiL	riter	xoku
3	kwirak	naxkceiL	riker	xodai
4	pis	tsoneL	riaower	kuigu
5	trop	merotsameL, meru	wesak-elel	tsanehe
6	kirivkir	qoxtseu	tekleluk-elel	p'un-tcibum
7	axak-anivkir	tserucek	haLow-elel	xoku-cbum
8	kwirak-anivkir	knewetek	hiowitaw-elel	xodai-tcibum
9	trop-atitcram	qrerermeq	mercerokw-elel	p'un-tcigu
10	traihar	werLerweriL	rulok-heler	saan-p'un
11	traihar karu yisa	werLerwi nemi qo	me-kotser	p'un-rasut
12	traihar karu axak	werLerwi nemi naain	me-riter	xoko-risut
13	traihar karu kwirak	werLerwi nemi naxkceiL		xodai-risut
14	traihar karu pis	werLerwi nemi tsoneL		kuigu-rsut
15	traihar karu trop	meru nemi tsam		tsanhe-risut
16	traihar haru kirivkir	qoxtseu nemi tsam		p'untcibum-arsut
17	traihar karu axakanivkir	tserucek nemi tsam		xokocbum-arsut
18	traihar karu kwirakanivkir	knewetek nemi tsam		xodaicibum-arsut
19	traihar karu tropatitcram	qrerermeq nemi tsam		p'untcigu-rsut
20	axak-a-traihar	nemi-werL	ritava-helel	xoku-mtun saanp'un
21	axak-a traihar karu yisa	nemi-werL nemit qoor		
30	kwirak-a-traihar	naxkeemi-werL	hikwa-helel	xoda-mtun saanp'un
40	pis-a-traihar	tsonemi-werL	rama-helel	kuigu-mtun saanp'un
50	trop-a-traihar	merutsi-werL	wesohele-weler	tsanehe-mtun saanp'un
60	kirivkir-a-traihar	qoxtseutsi-werL	teklelukhele-weler	
70	axakanivkir-a-traihar	tserucektsi-werL	haluhele-weler	
80	kwirakanivkir-a-traihar	knewetektsi-werL	hiowitahele-weler	
90	tropatitcram-a-traihar	qrerermeqtsi-werL	mercerokwhele-weler	
100	yisa patcis	werLerwitsi-werL	kotses-wani-heler	bucua-p'un
200	axak patcis			bucua-n-xoku

	Wintun[6] *Southern, Cache Creek*	*Wintun Southern*	*Wintun Central*	*Wintun Northern*
1	ete-ta	ete-ta	ketet	ketem
2	pampu-ta	pampa-ta	palel	palet
3	punul-ta	punuL-ta	panoL	panoL
4	emus-ta	emus-ta	Lawit	Lawi
5	ete-sem-ta	ete-sem-ta	tcancem	tsansem
6	ser-pul-ta	sere-puL-ta	se-panoL	sere-panoL
7	serp-uteta	serp-ete-ta	tcumiL	loloqi
8	pan-emus-ta	pan-emux-ta	tse-Lawit	se-Lawi
9	pan-emus-teta	panem-ete-ta	cema-ketet [*sic*]	ketem-ilis
10	pampa-sem-ta	pampa-sem-ta	cema	tiqelis
11	papu-sem-eteta	lum-eteta	cema-palel [*sic*]	tiqelis ketem-Lomi
12	panL-omi	panL-omi	= 3 [*sic*]	tiqelis pa-Lomi
13	panpu-sem-punulta	panLomi-tela	= 4 [*sic*]	tiqelis pano-Lomi
14	panpu-sem-emus-ta	Loti	= 5 [*sic*]	tiqelis Lawi-Lomi
15	panpu-sem-ete-sem-ta	punu-semta	panoL-tcancem	tiqelis tsane-Lomi
16	etc. to 19	pos-eteta	atc-ketet	tiqelis sere-pano-Lomi
17		pos-e-pano	= 2	tiqelis loloqi-Lomi
18		pan-ueli	= 3	tiqelis se-Lawi-Lomi
19		yaig-ueli	= 4	tiqelis ketem-ilis-Lomi
20		ete-kai	ketet-tcak	kete wintun
21		etekai-La-etela		kete wintun ketem-Lomi
30	punL-ada	ponL-ara-xsla	= 5 [*sic*]	panoL tiqelis
40	emus-pampusemta	pampa-kai		pal wintun
50	etesem-pampusemta	Lematin-posLai		tsanse tiqelis
60	serpul-pampusemta	pos-Lai		panoL wintun
70	serpute-pampusemta	Lematin-emukai		
80	panemus-pampusemta	emu-kai		
90	panamusteta-pampusemta	Lematin-etesemkai		
100		etesemkai		kete semhanot
200				pal semhanot

	Pomo[5] *Northern*	*Pomo Central*	*Pomo Eastern*	*Pomo Southwestern*	*Pomo Southern*	*Pomo Southeastern*	*Pomo Northeastern*
1	tca	tato	kali	ku	t'ca	dan	tcaki
2	ko	ko	xotc	ko	ako	xos	kon
3	subu	sibo	xomka	sibo	misibo	xoxat	kutc'aka
4	tak	duo-ko	dol	mitca	mi'tca	dako	kalkoton
5	cal	natsui	lema	tuco	tuco	talko	tc'a-ucon
6	tsadi	tsadi	tsadi	lan'-tca	lan-tca	xowaloxat	tca deika
7	koba	koina	kula-xotc	lan'-ko	lat-ko	sebaita, serpateta	tcumalan
8	koko-dol	koko-dol	koka-dol	komtca	komtca	panamusta, dan-widi	ceLawi-tca
9	kowal-com	namilka-com	hadagal-com	tcatco	tcatco	xut-pacem	na'kata
10	kowal-tek	namilka-tek	hadagal-tek	tca-coto	tca-cuto	pacem	ceLawi-tcaki
11	kowal-na-tca	namilka-na-tato	hadagal-na-kali	nan-tca	nan-tca	pacem-ke-dan	kat-tcaki
12	kowal-na-ko	namilka-na-ko	hadagal-na-xotc	na-ko	nañ-ko	pacem-ke-xos	kat-kokai
13	kowal-na-subu	namilka-na-sibo	hadagal-na-xomka	na-sibo	nan-sibo	pacem-ke-xoxat	kat-kutcaka
14	komat-com	komat-com	xomka-mar-com	si-hma-con	si-hma-con	pacem-ke-dako	kat kalkoto
15	komat-tek	komat-tek	xomka-mar-tek	si-hma-tek	si-hma-tik	pacem-ke-talko	
16	komat-na-tca	komat-na-tat	xomka-mar-na-kali	si-hma-nan-tca	si-hma-nan-tca	pacem-ke-xowaloxat	
17	komat-na-ko	komat-na-ko	xomka-mar-na-xotc	si-hma-na-ko	si-hma-nañ-ko	pacem-ke-sebaita	
18	komat-na-subu	komat-na-sibo	xomka-mar-na-xomka	si-hma-na-sibo	si-hma-nan-sibo	pacem-ke-panamusta	
19	tca-hma-com	tca-hma-com	xai-di-lema-com	tca-hma-con	tca-ham-con	pacem-ke-xutpacem	
20	tca-hma-tek	tca-hma-tek	xai-di-lema-tek	tca-hma	tca-hma-tik	ete-kai	
21	tca-hma-na-tca	tca-hma-na-tat	xai-di-lema-na-kali	tca-hma-nan-tca	tch-hma-non-tca	ete-kai-ke-dan	
30	na-na-kowal-tek	na-namilka-tek	na-hadagal	lantca-hma	lantca-hma	xoxolo-mai	
40	ko-te	ko-te	xotsa-xai	ku-hai	tca-hai	dan axots	
50	kowali-subu-te	namilka-wi-sibo-te	hadagal-e-xomka-xai	coto-hma	tuco-hai	talko-tal-pacem	
60	subu-te	sibo-te	xomka-xai	si-hmak-tcidu	lantca-cuto	xowalka-tal-pacem	
70	na-kowali-ta-te	namilka-wi-duoko-hai	hadagal-ai-dola-xai	si-hmak-tcidu-tcacoto	latko-cuto	caba-tal-pacem	
80	ta-te, tak-hai	duoko-hai	dol-a-xai	ko-hai	komtca-cuto	dan-wi-tal-pacem	
90	na-kowali-cal-hai	namilka-wi-natsui-hai	hadagal-ai-lema-xai	ko-hai-tcacoto-ko	tcatco-cuto	xut-pacem-tal-pacem	
100	cal-te, cal-hai	natsui-hai-tek	lema-xai	ko-hai-tcahma-ko	tcacuto-hai		
200	kowal-hai	namilka-tek-hai	hadagal-a-xai		ako-hai		

	Yuki[4] *Round Valley*	*Yuki Coast*	*Yuki Huchnom*	*Yuki Wappo*	*Washo*
1	pa^{n}-wi	pow-ik	pu-we	pawe	lak'a
2	op-i	op-ik	op-e	hopi	heske-ñ
3	molm-i	molm-ik	molm-e	hoboka	helmi-ñ
4	o-maha^{n}t, op-maha^{n}t	hilkil-opik	kes-ope	ola	hawa
5	hui-ko	pou-pat	pu-putc	gada	tubaldi-ñ
6	mikas-tcil-ki	pou-tit	pu-tal	pa-tenauk	tubaldi-lak
7	mikas-ko	ope-tot	opi-nun	hopi-tenauk	tubaldi-heskeñ
8	paum-pat, mipat-al-a-wa	molme-tit	kina-sa-nun	hopi-han	hawaawa
9	hutcam-pa^{n}wi-pan	hilkil ope-tit	helpiso-pu-tal	paw-alak	tubaldi ida hawa
10	hutcam-opi-sul	popate-tit	helpiso-humate	mahaic	laka mutsumi
11	molmi-sul		helpiso-pu-tik	mahaic-bawa-len	laka mutsumi ida lak
12	omaha^{n}t-sul		helpiso-ope-tik	mahaic-hopi-len	laka mutsumi ida heske-ñ
13	huiko-sul		helpiso-molme-tik		
14	mikastcilki-sul		a'la-pu-tan	mahaic-ola-len	
15	mikasko-sul		a'lau'		
16	hui-co(t), *or* '*eight*'		a'la-pu-tik	mahaic-patenauk-len	
17	pa^{n}wi-hui-luk, *or* '*nine*'		a'la'-ope-tik		
18	opi-hui-luk, *or* '*ten*'		a'la-kinasanun-tik		
19	molmi-hui poi, *or* '*eleven*'		pu-al-yak pu-tan	mahaic-paalak-len	
20	omaha^{n}t-hui-poi, *or* '*twelve*'	op-keckeneclak	pu-al-yak	hopi-hol	heske mutsumi
21				hopi-hol paa-len	
30		mol-keckeneclak	misau op'-alya	boko-hol	helmi mutsumi
40		hilkilop keckeneclak	op'-alya	ol-hol	
50		poupat-keckeneclak	misau mom-alya	gada-hol	
60			mom-alya	patenauk-hol	
70			misau kinasanun-alya	hopitenauk-hol	
80			kinasanun-alya	hopihan-hol	
90				paalak-hol	
100		po-al	pu-al	mahaic-hol	la'mutsummutsumi
200		ope-al	ope-al		

	Shastan *Achomawi*	*Shastan* *Atsugewi*	*Shastan*[20] *Shasta*	*Yana*[8]
1	hamis	tsutsatstsi	ts'amo	pai-ku
2	haq	hoki	xokwa	o'-mitci
3	tsasdi	kiski	xatski	pul-mitci
4	hadama	haq'-kau	irahaya, idahaya	tau-mi
5	latu	harapakina	e'-tsa	tcim-an, tcimani
6	mas-uts	tciu-put-saki	tso-wateha	pur-han, bun-hari[8]
7	haq-uts	hoki-put-saki	xokwa-wateha	tcumini
8	hadame-lil[h]	kiski-put-saki	xatski-wateha	taum-hari, u'tesa[8]
9	malusi-dudjiku hamis-antji	tciwi-rap-saki	irahaya-wateha	pai-itca-tenna, pai-itca[9]
10	malusi	tcuw-iksii	e'tse-hewi	hats-er'i, hats-an
11	malusi hamis-atumi	tcuwiksii tciu-i wawi	e'tsehewi-tok tsea keheha	pai-mamii, pai-iwa
12	malusi ede-haq-atumi	hoki-i wawi	e'tsehewi-tok xokwa keheha	o'-mamii, owh-iwa
13	malusi ede-tsasd-atumi	kiski-i wawi	etc. regularly to 19	pul-mamii, pul-iwa
14	malusi ede-hadam-atumi	haqau-i wawi		taumi-mamii, taum-iwa
15	malusi ede-lad-atumi	harapakina-i wawi		tciman-mamii, tciman-iwa
16	malusi ede-masuts-atumi	tciriputsaki-i wawi		purha-mamii
17	malusi ede-haquts-atumi	hokiputsaki-i wawi		tcumini-mamii
18	malusi ede-hadamelil-atumi	kiskiputsaki-i wawi		taumhari-mamii
19		tciwirapsaki-i wawi		paitcatunna-mamii
20	haq-el-malusi, masis	hok'-ne tcuwiksii	xokwa-id e'tsehewi	uciwaii
21	haq-el-malusi hamis-atumi	hok'-ne tcuwiksii tciw-i wawi		
30	tsasd-il malusi	kiks-ne tcuwiksii	xatski-dai e'tsehewi	uciwaii hatsermamii
40	hatam-il malusi		irahaya-idu e'tsehewi	
50	lat-il malusi		e'ts-idu e'tsehewi	
60	masutj-il malusi		tsuwad-iru e'tsehewi	
70	masuts-wade hamisatumi malusi		xokwawad-idu e'tsehewi	
80	masuts-haq-ilatumi malusi		xatskiwad-iru e'tsehewi	
90			irahayawad-idu e'tsehewi	
100	malus-el malusi		e'ts-idu-wad-idu e'tsehewi	
200				

	Maidu *Northwestern*[18] — *Konkau*	*Maidu* *Northwestern*[18] — *Mooretown*	*Maidu* *Northeastern* — *Genesee*	*Maidu* *Southern*[18] — *Spanish Flat*[13]
1	wikte	wikte	suti	wite
2	pene	pene	pene	pen
3	sapu	sapwi	sapu	sapwi
4	tsŏye	tsŏye	tsŏye	tsŏye
5	ma-tsani[14]	ma-wika[15]	ma-wika	ma-wik
6	sai-tsoko	sai-tsoko	sai-tsoko	tombo
7	matsan-pene	topwi	topwi	topwi
8	tsŏye-tsoko	pen-tcoi	pen-tcŏi	pen-tcŏi
9	tsŏye-ni-masoko[10]	peliom	peliom	pen-lio
10	ma-tsoko	ma-tsoko	ma-tsoko	ma-tsani[14]
11	wikem-noko[11 12]	wikte-ni wikem-noko[11]	masok-na sutim[16]	hi-woto
12	peni-wikem-noko	wŏkem-noko	wŏkem-noko[11]	pen-woto
13	sapwi-ni-hiwali[10]	sapwim botam	masok-na sapwi[10]	sapwi-ni-al
14	tsŏye-ni-hiwali	tsŏyem botam	masok-na tsŏyem	tsŏi-ni-al
15	hiwali	matsokom mawikom	masok-na mawikem	hiwal
16	wŏk-ni-maiduk-wŏkŏ[10]	matsokom saitsokom		oiseto
17	peni-maiduk-wŏkŏ	etc.		penem maiduk
18	sapwi-ni-maiduk-wŏkŏ			sapwi-nim maiduk
19	tsŏye-ni-maiduk-wŏkŏ			tsŏi-nim maiduk
20	maidu-k-wŏkŏ	penim nokom	penem masoko	kom maiduk[17]
21				
30	matsok-ni pene-ma	sapwim matsoko	sapwim masoko	sapwim matsan
40	peni-ma	etc., regularly	etc., regularly	tsŏim matsan
50	matsok-ni sapwi-ma			
60	sapwi-ma			
70	matsok-ni tsŏye-ma			
80	tsŏye-ma			
90	matsok-ni matseni-ma			
100	matseni-ma			
200				

	Moquelumnan Plains	*Moquelumnan Amador*	*Moquelumnan Tuolumne*	*Moquelumnan Mariposa*	*Moquelumnan Coast—Western and Southern*	*Moquelumnan Coast—Northern*
1	kenatü	luti	keñe	keñe	kene	kene
2	oyoko	otiko	otiko	otiko	osa	ota
3	teloko	tolokocu	tolokocu	tolokot	teleka	teleka
4	oiceko	oyisa	oyisa	oyisa	huya	ototа
5	kacoko	macoka	macoka	mahoka	kenekus	kedeko
6	temepu	temoka	temoka	temoka	patcitak	patsadat
7	kenekak	kenekaku	kenekaku	titawa	semlawi[20]	semlawi
8	kawinta	kawinta	kawinta	kawinta	osuya	otaya
9	woe	wo'e	woe	eliwa	unutas	kenen-helak
10	ekuke	naatca	naatca	naatca	kitsis	ukukutsi
11		lu-cakena	keñ-hateaku	naatca keñe hateuni	kene-lilek	kene-walik
12		otik-cakena	otik-sakenu	naatca otiko-i hateuni	osa-lilek	ota-walik
13		toloti-aku	tolok-sakenu	naatca tolokot-ui hateuni	etc. regularly	etc. regularly
14		kolok-aku	kolok-aku	naatca oyisa hateuni		
15		yuali	yuali	naatca mahoka hateuni		
16		oy-ota	oyoto	etc. to 19		patsada-ko-walik
17		otiko-maiazo	naatca mu kenekaku			
18		tak-cakena	naatca mu kawinta			
19		minimi	naatca mu woe			kenenhela-ko-walik
20		naa	naa	oti-ak naatca	osa-gitcis	ota-tumai
21		naa-ima luti	naa mu keñe	oti-ak naatca keñe hateuni	osa-gitcis-kene	ota-tumai-to-kene
30		naa tomeakü naatcai	naa mu naatca	tolo-yak naatca	teleka-gitcis	teleka-tomai
40		otik-mama[19]	otik-mumu	oyis-iak naatca	huya-gitcis	etc. regularly
50		otikmama tomeakü naatcai	otik-mumu naatca heyi	maho-yak naatca	keneku-gitcis	
60		tolok-momo[19]	tolok-mumu	temo-yak naatca	etc. regularly	
70		tolokmomo tomeakü naatcai	tolok-mumu naatca heyi	titawa-yak naatca		
80		oyis-momo	oyis-mumu	kawita-yak naatca		
90		oyis-momo tomeakü naatcai	oyis-mumu naatca heyi	eliw-iak naatca		
100		macok-mumu[19]	macok-mumu	keñe nenu, naatc-iak naatca	gitcis gitcis	ukukutsi-tomai
200						

	Yokuts Valley	*Yokuts Foothills*	*Yokuts Kern Lake*	*Shoshonean Gabrielino*	*Shoshonean Cahuilla*	*Shoshonean Serrano*
1	yet	yet	yit	puku	supli	haukup
2	ponoi	poñoi	puñi	wehe	wi	wor
3	copin	copin	cop	pahe	pa	pahi
4	hotponoi	hatpañi	tapañi	watsa	witcuw	watca
5	yitcinil	yütciñud	yitsüñul	mahar	nama-qwan-añ	mahaʳtc
6	tc'olipi	tc'odipi	ts'olipi	pabahe	qwan-supli	pazahai
7	nomtc'il	nomtc'in	numts'in	watsa kazia	qon-wi	watc'-kuzik
8	mun'oc	mun'oc	mu'nas	wehe-s watsa	qon-pa	wa'-wutc
9	coponhot	nonip	wutcat	mahar kazia	qon-witcuw	ma'-kuzik
10	t·ieu	t·ieu	t·ieu	wehe-s mahar	nami-tcumi	wor-mahaʳtc
11	yetc-am	yetc-am	dŏwap	wehe-s mahar koi puku	peta-supli	pu'pa-haukup
12	patcd-om	cuyukai	culokai	wehe-s mahar koi wehe	peta-wi	pu'pa-wor
13	copi-om	copi-om	t·ieu ya cop[21]		peta-pa	pu'pa-pahi
14	hotcp-om	hatcp-am	t·ieu ya tapañi		peta-witcuw	pu'pa-watca
15	yitc-am	yütc-am	t·ieu ya yitsüñul		peta-namaqwanañ	pu'pa-mahaʳtc
16	tc'olp-om	tc'oap-om	t·ieu ya ts'olipi		peta-qwansupli	
17	nomtc'-om	nomtc'-om	t·ieu ya numts'in		peta-qonwi	
18	mun'c-am	mun'c-am	t·ieu ya mu'nas		peta-qonpa	
19	coponhot-min	nonp-om	t·ieu ya wutcat		peta-qonwitcuw	
20	ponoi t·ieu	poñoi t·ieu	puñi t·ieu	wehe-s wehe-s mahar	wis namitcumi	woho-wormahaʳtc
21		poñoi t·ieu yet			wis namitcumi petasupli	
30	copin t·ieu	copin t·ieu	cop t·ieu	pahe-s wehe-s mahar	pas namitcumi	pohi-wormahaʳtc
40	hotponoi t·ieu	hatpañi t·ieu	tapañi t·ieu	watsa-hes wehe-s mahar	witcius namitcumi	watca-wormahaʳtc
50	yitcinil t·ieu	yütciñud t·ieu	yitsüñul t·ieu	mahar-es wehe-s mahar	namaqwanañes namitcumi	
60	etc.	etc.	etc.		qwansuplis namitcumi	
70					qonwis namitcumi	
80					qonpas namitcumi	
90					qonwitcius namitcumi	
100	yet pitc	yet pitc	yit demenitc	wehe-s mahar-es wehe-s mahar	supli pisetiwenit	
200	ponoi pitc	poñoi pitc				

	Chumash *San Luis Obispo*	*Chumash* *Santa Cruz Island*	*Chumash* *Santa Barbara*	*Chumash* *Santa Ynez*
1	tsxumu [23]	ismala	paka [24]	paka [24]
2	ecin	isxum	ickomo	ickom
3	mica	masex	masex	masδx
4	paksi [23]	ckumu	ckumu	ckumu
5	tiyewi	sit-isma	yiti-paka	yiti-pakas
6	ksua-sya	sit-isxum	yiti-ckomo	yiti-ckom
7	kcua-mice	sit-masex	yiti-masex	yiti-masδx
8	ckomo [23]	malawa	malawa	malawa
9	cumo-tcimaxe	spa	tspa	ts'pa
10	tuyimili	ka-ckum	kel-ckomo	tciya
11	tiwapa	telu	tulu	na-paka [25]
12	takotia	masex-pa-ckumu	masex-eskumu	na-ickom
13	wak-cumu		kel-paka	na-masδx
14	wakl-esin		kel-icko	na-ckumu
15	wakl-mice		kel-masex	na-yitipakas
16	peusi		peta	na-yitickom
17				etc.
18				
19				
20		isxum-pas-kackum [25]	ickom-c-kelckomo [25]	ickom-a-tciya [25]
21				
30		masex-e-pas-kackum	mase-c-kelckomo	masδx-a-tciya
40		ckumu-pas-kackum	cumu-c-kelckomo	ckumu-a-tciya
50			yitipake-c-kelckomo	yitipakas-a-tciya
60				etc.
70				
80				
90				
100		kackum-pas-kackum		
200				

	Costanoan San Juan Bautista	*Costanoan Monterey*	*Costanoan Santa Cruz*	*Costanoan Santa Clara*	*Esselen*	*Salinan*[28] *San Antonio*	*Yuman*[29] *Mohave*
1	hem-etca	im-xala	im-hetc	im-hen	pek	ki-tol	seto
2	utsxin	ut'is	ut'in	utin	xulax	kakice	*h*a*v*ik
3	kapxan	kapes	kaphan	kapan	xulep	Lapai	kamok
4	utit, karuac	ut'itim	katuac	katuac	xamaxus	ki-ca	tcimbapk
5	parue	hale-is	micur	mucur	pe-maxala	ult·ao	çarapk
6	na-kitci	hale-caken	caken	caken	pek-walanai	pai-nel	siinta, maisentik
7	tsa-kitci	ut-xomai-caken	tupuituk	kenetc[26]	xulax-walanai	te	*v*iika, maiko*v*iika
8	taitimin	kap-xai-cak	usatis	osatis	xulep-walanai	ca-nel	muuka, maikomuuka
9	paki	pak	neuku	telektic[27]	xamax-walanai	teta-tsoi	payi, paya
10	tansa-xte	tantsa	iec	wec	tomoila	tsoe	arrapa, raph*a*v*i*k
11	tansa-xte hemetca hatcitcos		imhec-waka-uc	iinhen-ay	pek-kelenai	tso-sok-tol	raph*a*v*i*k asenkenik
12			ut'in-uc	utin-ay	xulax-kelenai	Lapai-kca	raph*a*v*i*k h*a*v*i*k ni*ð*auk
13						Lapaikca·t·ek-tol	raph*a*v*i*k hamok ni*ð*auk
14						wococo	etc.
15						Lapai-ult·ao	
16						kpec	
17							
18							
19							
20	utsxin-tanats		ut'in-iwec	utin-wic			(raph*a*v*i*k) daka*ð*utc*v*e h*a*v*i*k
21							
30			kaphan-iwec	kapan-wic			(raph*a*v*i*k) daka*ð*utc*v*e hamok
40	utit-tanats		katuac-iwec				(raph*a*v*i*k) daka*ð*utc*v*e tcimbapk
50			micur-iwec				(raph*a*v*i*k) daka*ð*utc*v*e çarapk
60			caken-iwec				
70							
80							
90							
100	tansa-xte tanat		tapan				(raph*a*v*i*k) daka*ð*utc*v*e raphavik
200							

NOTES TO THE LISTS OF NUMERALS

(1) Thanks are due the following for contributions to these lists: Professor P. E. Goddard, the Athabascan tables; Mr S. A. Barrett, all the Pomo, the Central and Cache Creek Wintun, the Coast and Tuolumne Moquelumnan, and Wappo Yuki; Dr A. M. Tozzer, part of the Amador Moquelumnan; Mr H. B. Wilson, part of the Southern Wintun. The Lutuami is taken from A. S. Gatschet's work on the Klamath language. Hale, in volume II of *Transactions of the American Ethnological Society*, has furnished San Antonio Salinan, San Luis Obispo Chumash, and, with Loew (Appendix to volume VII of the *Wheeler Survey*), the Santa Barbara Chumash. The Gabrielino list is mainly from Ried's account of the Los Angeles Indians, reprinted by Taylor in the *California Farmer*. The following are from the various sources drawn upon in the linguistic appendix of Powers' *Tribes of California*: Wishosk (part), Costanoan except Monterey, Santa Cruz Island Chumash. Esselen is from a compilation in a paper in volume II of the *University of California Publications in American Archæology and Ethnology*.

(2) The normal Athabascan numeral system is decimal. Hupa 11 is translated by Professor Goddard 10 by-its-side again-1. Kato, the southernmost dialect in the state, in territorial contact with Yuki and Pomo, is quinary as far as 20.

(3) The Yurok numerals show many forms according as they refer to different classes of objects. The forms here given are used in counting. From 6 to 9 the ending *-tsameL*, found also in 5, may be added. The words for 7, 8, and 9 are the names of the three middle fingers of the hand. *Tserucek*, 7, means pointer, the index finger, from *tserwerc*, to point; *knewetek*, 8, means long one, the middle finger. From 11 to 14, *werLerwi*, 10, may be omitted.

(4) The interesting Yuki numerals are given in translation in the accompanying table. In the Round Valley or Yuki proper dialect, which alone is quaternary, but is strictly so, a number of variant forms have been obtained. 8 may be *mipat-op-kitc*; 9, *hutcam-pan*, or *pa"wi-pan*, both reductions of the full form *hutcam-pa"wi-pan*; 10, likewise by omitting hutcam, *opi-sul*; 18, *opi-hui-poi*. 24 = 8, 26 = 10, 35 = 19, 51 = 19, 64 is *omaha"t-tc-am-op*. The elements entering into the higher compound descriptive numerals appear, from comparison with other Yuki words and phrases, to have the following meanings: *sul*, body (Indian's translation, hang); *luk*, project (Indian's translation, in); *coi*, stuff (Indian's translation, in); *al-a-wa*, stick-wide, with inserted phonetic *-a-*; *kitc*, cut; *poi*, in; *pat*, flat; *pan*, hang; *pa*, lift; *hutcam*, Indian's translation, over, beyond; *mikas*, Indian's translation, even. It will be seen that none of the dialects, except Wappo, shows simple stems, that is, pure numeral roots, above 3; and that the stems for 1 and 2, *paw* and *op*, are the only words common to the counting of the four dialects.

ANALYSIS OF YUKI NUMERALS

	Yuki proper	*Coast*	*Huchnom*	*Wappo*
1	1	1	1	1
2	2	2	2	2
3	3	3	3	hoboka
4	2-forks	hilkil-2	kes-2	ola
5	middle-in	1-flat (?)	1-putc	gada
6	mikas-tcilki	1-tit	1-tal	1-tenauk
7	mikas-in	2-tit	2-nun	2-tenauk
8	1-flat, hand-stick-flat, hand-on-cut	3-tit	kinasa-nun	3-han
9	beyond-1-hang, beyond-hang, 1-hang	4-tit	helpiso-1-tal	1-put-out (?), 1-stick-ak(?)
10	beyond-2-body, 2-body	5-tit	helpiso-straight	mahaic
11	3-body		helpiso-1-tik	mahaic-1-and
12	2-forks-body		helpiso-2-tik	mahaic-2-and
13	middle-in-body		helpiso-3-tik	
14	mikas-tcilki-body		stick(?)-1-tan	mahaic-4-and
15	mikas-in-body		stick(?)	
16	middle-none, 8		stick(?)-1-tik	mahaic-6-and
17	1-middle-project, 9		stick(?)-2-tik	
18	2-middle-project, 10		stick(?)-8-tik	
19	3-middle-project, 11		1-stick-stand-1-tan	mahaic-9-and
20	4-middle-project, 12	2-keckeneclak	1-stick-stand	2-hol
30		3-keckeneclak	finger-2-stick-stand	3-hol
40		4-keckeneclak	2-stick-stand	4-hol
50		5-keckeneclak	finger-3-stick-stand	5-hol
60			3-stick-stand	6-hol
64	2-fork-pile(?)-at			[6-hol-4-and]
100		1-stick	1-stick	10-hol
200		2-stick	2-stick	

Yuki proper 8, hand-on-cut, may also be translated hand-2-cut, or hand-2-only.

(5) The composition of the Pomo numerals in the several dialects is shown in the following table. Italicized words are connotive, not etymological translations. They give the meaning which the Indian part of the word must have, as shown by the remainder of the word. It will be seen that all the systems are entirely quinary-vigesimal, except the Southeastern, which while decimal above ten is largely borrowed from the neighboring Wintun, and the Southern dialect, which is decimal from forty up. There is some subdialectic difference within this latter dialect. A southern subdialect differs from that given here in being decimal between ten and thirty. The numbers from eleven to nineteen are formed from *wi*, a conjunction, and the numbers from one to nine. Twenty in this southern subdialect is two ten. In the Northern, Central, and Eastern dialects the word for ten may be omitted in the numbers from eleven up, though this is unusual. The same holds true in the Southeastern dialect. In the Southern and Southwestern dialects, on

the óther hand, the numbers from eleven to thirteen are usually spoken simply and one, and two, and three, without prefixed ten, although this ten is occasionally used.

ANALYSIS OF POMO NUMERALS

	Northern	*Central*	*Eastern*	*Southwestern*	*Southern*	*Southeastern*
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	duo-2	4	4	4	4
5	5	5	5	5	5	5
6	1-di	1-di	1-di	lan-1	lan-1	6
7	2-ba	2-ina	kula-2	lan-2	lat-2	7 [Wintun]
8	2-ko-4	2-ko-4	2-ka-4	kom-4 (?)	kom-4 (?)	1-widi, or 8 [Wintun]
9	10-*less*	10-*less*	10-*less*	1-tco	1-tco	xut-*10*
10	10-*full*	10-*full*	10-*full*	1-10	1-10	*10* [Wintun]
11	10-+-1	10-+-1	10-+-1	+-1	+-1	*10*-+-1
12	10-+-2	10-+-2	10-+-2	+-2	+-2	*10*-+-2
13	10-+-3	10-+-3	10-+-3	+-3	+-3	*10*-+-3
14	15-*less*	15-*less*	3-mar-*less*	3-hma-*less*	3-hma-*less*	*10*-+-4
15	15-*full*	15-*full*	3-mar-*full*	3-hma-*full*	3-hma-*full*	*10*-+-5
16	15-+-1	15-+-1	3-mar-+-1	3-hma-+-1	3-hma-+-1	*10*-+-6
17	15-+-2	15-+-2	3-mar-+-2	3-hma-+-2	3-hma-+-2	*10*-+-7
18	15-+-3	15-+-3	3-mar-+-3	3-hma-+-3	3-hma-+-3	*10*-+-8
19	1-hma-*less*	1-hma-*less*	stick-di-5-*less*	4-hma-*less*	4-hma-*less*	*10*-+-9
20	1-hma-*full*	1-hma-*full*	stick-di-5-*full*	4-hma-*full*	4-hma-*full*	*1*-stick [*1*=Wintun]
21	1-hma-+-1	1-hma-+-1	stick-di-5-*full*-+-1	4-hma-+-1	4-hma-+-1	*1*-stick-+-1
30	na-na-10-*full*	na-10-*full*	na-10	6-hma	6-hma	6-mai
40	2-stick	2-stick	2-stick	1-stick	1-stick (4-stick?)	1-axots
50	10-i-3-stick	10-at-3-stick	10-e-3-stick	10-hma	5-stick	5-tal-*10*
60	3-stick	3-stick-*full*	3-stick	3-hma-tcidu	6-10	6-tal-*10*
70	na-10-4-stick	10-at-4-stick	10-ai-4-stick	3-hma-tcidu-10	7-10	7-tal-*10*
80	4-stick	4-stick	4-stick	2-stick	8-10	8-tal-*10*
90	1-10-5-stick	10-at-5-stick	10-ai-5-stick	2-stick-10-ko	9-10	9-tal-*10*
100	5-stick	5-stick-*full*	5-stick	2-stick-1-hma-ko	10-stick	
200	10-stick	10-*full*-stick	10-stick		2-stick	

(6) Northern Wintun 6 and 8 are derived from 3 and 4 by the prefixion of multiplicative *sere-* or *se-*. 20 is 1 person. 40 and 60 are respectively 2 and 3 persons, but 30 and 50 are 3–10 and 5–10. The method of counting above 20 is thus alternately vigesimal and decimal.

Multiplication is also found in Central Wintun *panoL-tcancem*, 15, = 3–5, and in Southern *panLomi*, 12, which appears to be *panoL-Lawi*, 3–4. The Southern dialect is vigesimal from 20 up, except for *ponL-araxsla* thirty; *ponL*, = *panoL*, 3, shows this to be a decimal form.

(7) Achomawi 70 and 80 are not decimal, but formed from 60 as a base.

(8) Yana *bun-hari* and *taum-hari*, 6 and 8, are from *pul-mitci* and *taumi*, 3 and 4. 9 contains the stem of 1.

(9) Lutuami *-anta*, on 11–19, is a locative case ending; *-ni*, on 20–90, is a suffix making adjectives of numerals.

(10) The frequent *-ni*, 'with,' in the Maidu lists is to be taken as equivalent to 'toward,' counting from the last preceding basis. 1-with-man = 1 toward a man = 1 toward 20, i. e. 1 toward 20 from 15, the last basis. Somewhat analogously, the suffix *-na*, 'from,' is in the Northeastern dialect used in a sense the opposite of that which we should attach to it. *Masok-na sapwi*, 10-from 3, is not 3 from 10, 7, as we should read it, but 3 counting onward from 10, i. e. 13.

(11) It is interesting that the word *noko*, arrow, varies in numerical significance between 10, 11, and 12:

10, Northwestern, Mooretown, *penim nokom*, 2 arrows, = 20.

11, Northwestern, Konkau, *wikem nokom*, 1 arrow, = 10; but: *pe-ni-wikem-noko*, two-with-one-arrow, or, as we should say, two beyond [the last unit (10) toward] 1 arrow (11), = 12 (*sic*).

12, Northwestern, Mooretown, and Northeastern, Genesee, *wokem noko*, 1 arrow, = 12.

(12) The Northwestern Maidu near Chico counted from 1 to 20 like the Konkau, with the exception of:

11 *wik-ni hiwali*, 1-with 15. 13 *sapwi-ni hiwali*, 3-with 15.
12 *pe-ni hiwali*, 2-with 15. 14 *tsōye-ni hiwali*, 4-with 15.

(13) The following variations have been observed within the Southern Maidu dialect:

At Swede's Flat:

9 *peliom*, as in Northeastern and Northwestern dialects.
11 *wikte-ni wikem-noko*, as in Northwestern dialect at Mooretown.

At Twelve Mile:

9 *peliom*. 12 *matsan pen*, ten two.
11 *matsan witte*, ten one. 13 *matsan sapwi*, ten three, etc.

At Sacramento:

16 *hial-t-aka*. 30 *matsa-ni pen*, ten-with forty.
17 *hiwal-ban-aka*. 40 *peni-wie*, 2-wie.
18 *hiwa-sp-aka*. 50 *matsa-ni sapwie*, ten-with sixty.
19 *tsōi-ni maiduk*, four-with man. 60 *sap-uye*, 3-wie.
20 *kum maiduk*, whole man.

(14) Compare Northwestern Maidu 5 and Southern Maidu 10: *ma-tsani.*

(15) Compare Maidu 5, *ma-wika,* with Miwok *ma-hoka, masoka,* 5.

(16) Northeastern Maidu:

11 10-from 1.
12 1-arrow.
13 10-from 3.
14 10-from 4.
15 10-from 5.

(17) For 20, Southern Maidu, Spanish Flat, uses also

witem maiduk, 1 man; *pen-pai matcam,* 2-*times* ten.

(18) An analysis of the Northwestern and Southern Maidu numerals is given in the following table:

ANALYSIS OF MAIDU NUMERALS

	Northwestern Konkau	*Northwestern Mooretown*	*Southern Spanish Flat*
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	hand-tsani (?)	hand-1 (?)	hand-1 (?)
6	3-double	3-double	to-mbo
7	5-2	[7 = topwi, 3 = sapwi]	to-pwi
8	4-double	2-4	2-4
9	4-with-10	2-liom	2-lio
10	hand-double	hand-double	hand-tsani
11	1-arrow	1-with 1-arrow	hi-woto
12	2-with-1-arrow	1-arrow	2-woto
13	3-with-15	3 botam	3-with-al
14	4-with-15	4 botam	4-with-al
15	15 = hiwali	10 5	15 = hiwal
16	1-with-man-1	10 6	oiseto
17	2-with-man-1	etc.	2-with-man
18	3-with-man-1		3-with-man
19	4-with-man-1		4-with-man
20	man-1	2 arrow	whole-man, 1-man, or 2-*times*-10
21			
30	10-with 2-man	3 ten	3-10
40	2-man		4-10
50	10-with 3-man		
60	3-man		

(19) For *-mama, -momo, -mumu,* or *-mimu,* a form *-muyu* has also been obtained.

(20) Cf. Wintun 8, *seLawi.*

(21) It is not unlikely that this method of counting from 11 to 19 by expressed addition to 10 is recent. A similar method is followed in

most Valley and Foothill dialects today, yet the older people generally use or remember the shorter derivative forms here given.

(22) The Shoshonean dialects of Southern California appear to develop their higher numerals from a few simple elements by very transparent methods. This is evident in the Gabrielino table given, which is taken from Ried's list in the *California Farmer* (XIV, 146, January 11, 1861). *Wehe-s* is twice, *pahe-s* is thrice, etc. The Luiseño, according to the late Mr P. S. Sparkman, follows methods that are even more primitive and variable. There are simple numerals only to five. Every higher number is denoted by a phrase which is nothing but the expression of an arithmetical operation. The choice of expressions used is particularly interesting. Six may be expressed by 'again one,' or by 'another besides one,' or by 'five one upon,' or by 'besides my-hand one finger.' Eight is expressed in the same way, with the substitution of 'three' for 'one.' Ten is again the same, with 'five' instead of 'one.' Or, to denote ten, it is possible to say 'my-hand finished both,' or 'all my-hand finished.' The following are terms for higher numbers:

10, my-hand finished both.
20, another finished my-foot the-side.

10, all my-hand finished.
15, all my-hand finished and one my-foot.
25, all my-hand my-foot finished and another five.
40, all my-hand my-foot finished again all my-hand my-foot finished.

40, twice my-hand my-foot finished.
80, four-times all my-hand my-foot finished.
100, five-times all my-hand my-foot finished.
200, again five-times all my-hand my-foot finished.

11, besides other my-hand one finger.
16, besides my-foot one finger (= toe).
21, besides other my-foot one finger (= toe).

11, twice five one upon.
16, thrice five one upon.
20, four-times five.
30, five-times five, five upon.
71, five-times five, another five-times five, and four-times five, one upon.

While multiplication is freely used for the formation of higher numbers, the highest multiplier used is five. With this, higher units of twenty-five are formed, which are added together to express the numbers below one hundred; or a unit of twenty is formed by some phrase such as 'all my-hand my-foot finished,' and this is raised by multiplication to one hundred, or, by the use of a phrase such as 'again five,' to two hundred. What is most interesting is that these numbers are reached without the use of a numeral higher than five.

(23) San Luis Obispo Chumash for 1 and 4 resemble 4 and 1 respectively in other dialects; *ckomo*, 8, occurring only in this dialect, is from the common root for 2 and 4.

(24) This Chumash form for 1, *paka*, is probably related to Esselen *pek*, and to the *puku* which neighboring Gabrielino alone shows for 1 among all the Shoshonean dialects.

(25) The aboriginal way of counting was evidently the same in Chumash as in Salinan: to 16 as the first higher unit, and then presumably by multiplying this unit and adding to it. It is likely that the decimal forms from 20 up are due to white contact and influence; the same is very probable for the Santa Ynez forms from 11 to 19, which were recorded many years after the corresponding forms in the other dialects.

(26) Compare Miwok 7, *kenekak*.

(27) Compare Miwok 3, *teloko*.

(28) The very interesting Salinan system is at once quaternary and multiplicative in method. The highest unit-term obtained is 16, as in the neighboring Chumash languages. *Pai-nel* and *ca-nel*, 6 and 8, are derived from *La-pai* and *ki-ca*, 3 and 4; *ki-* is evidently not part of the stem (though it appears in *ka-ki-ce*, 2), for Sitjar gives *tol* for 1 (Hale *ki-tol*), and *ke-te* for 7 (Hale *te*). The *t·* in *ult·ao*, 5, is nearly *tr*. 9, *teta-tsoi*, appears to contain 1, *tol*, and 10, *tsoe*. 12, *Lapai-kca*, is 3–4, and 15 is 3–5; 11 and 13 are 10 and 1 and 12 and 1; 14, like 7, is unanalyzable. The simple numeral stems would therefore seem to be: *tol*, 1; *ca*, 2 or 4; *pai*, 3; *ult·ao*, 5; *te*, 7; *tsoe*, 10; *wococo*, 14; *kpec*, 16.

(29) In *Wheeler Survey*, VII, 457, vocabulary 28, the Diegueño numerals are thus given:

1, *khink*.
2, *oak*.
3, *hamok*.
4, *tchibabk*.
5, *selkh-akai*.
6, *niu-gushbai*.
7, *niok-hoak* (cf. 2).
8, *niok-hamuk* (cf. 3).
9, *ni-tchibab* (cf. 4).
10, *selgh-iamat*.
11, *nie-khin*.
12, *niekhv'ab gushbaib* (twice 6?).
20, *selgh-hoak* (10–2).

(30) The Shasta also use the following system in counting above twenty: 20, *tsec*, one-man; 30, *tsectsim etsehewi*, one-man-tsim-ten; 40, *xoka-hic*, two-man; 50, *xoka-hic etsehewi*, two-man-ten; 60, *xatsk-ic*, three-man; 70, *xatsk-ic etsehewi*, three-man-ten; 80, *iraha-ic*, four-man; 90, *iraha-ic etsehewi*, four-man-ten; 100, *aitsa-ic*, aitsa-man.

HARVARD UNIVERSITY
UNIVERSITY OF CALIFORNIA

ON A NEPHRITE STATUETTE FROM SAN ANDRÉS TUXTLA, VERA CRUZ, MEXICO

By W. H. HOLMES

In June, 1902, a correspondent residing in the city of Orizaba, Mexico, announced, in the following note, the discovery of an archeological object of much apparent interest:

Dear Sir:

I send you herewith two photographs of a jade idol which was dug up by the plow in the district of San Andrés Tuxtla on the Gulf coast of Mexico, about 100 miles southeast of Veracruz. I have had it photographed on account of its material and of the hieroglyphics in the hope that both may be of some archeological value. I believe that jade is not found in this country, so that the material and the design and possibly the hieroglyphics would seem to be points in favor of the theory of an Oriental origin for some of the inhabitants of ancient Mexico.

Yours very truly,

ALFRED BISHOP MASON.

Nothing further transpired regarding the specimen until July, 1903, when a letter was received from New York referring to what appeared from the description to be the same or a closely similar specimen. The letter is as follows:

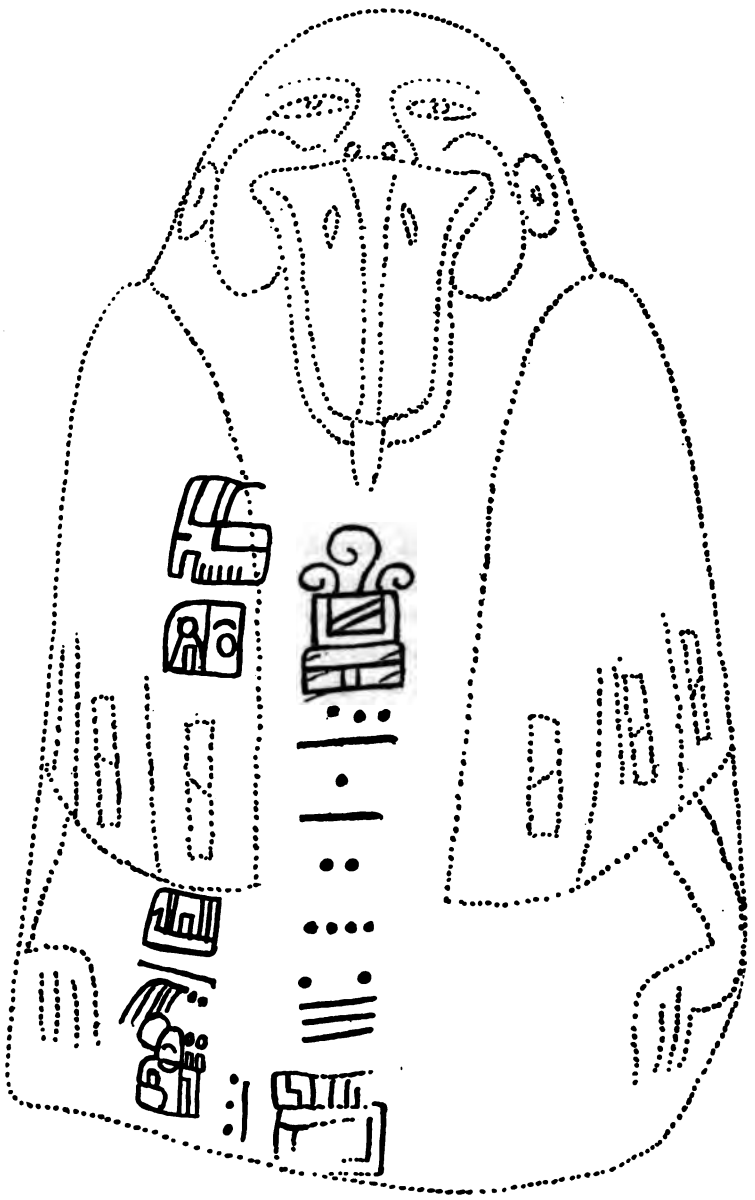
Dear Sir:

During my recent trip to Mexico, a friend of mine in Orizaba, Mexico, showed me an old — as he believes — Aztec idol. It is about 6½″ high and 4″ wide, and seems to represent the head and face of a priest with hieroglyphics cut into the sides and back of the cassock with which the figure is covered from the shoulders down. The idol is cut out of jade (serpentine, as they call it in Mexico), and was found by one of the farm hands while plowing. If this should be of interest to you for the purpose of deciphering the hieroglyphics or to acquire it for the collection in the Smithsonian Institution, please advise me and I will take pleasure in sending it to you by express.

Yours respectfully,

R. E. ULBRICHT.

A little later the specimen was forwarded to the writer for examination. It proved to be a nephrite carving of exceptional



NEPHRITE STATUETTE FROM SAN ANDRES TUXTLA, VERA CRUZ
FRONT VIEW



NEPHRITE STATUETTE FROM SAN ANDRES TUXTLA, VERA CRUZ
FRONT VIEW



delayed in order that this specimen might be scrutinized by such of our archeologists as are versed in the antiquities and glyphic writing of Mexico.

Drawings of the glyphs were submitted to Dr Cyrus Thomas, one of our foremost students of American glyphic writing, who furnished the following note:

The glyphs shown in the figures referred to me may be assigned, I think without doubt, to the Mayan culture, but of that type which appears to be of the cursive, possibly demotic, class. For comparison I would refer you to Brinton's paper entitled "The Books of Chilan Balam," and to the so-called Leyden Stone. Similar characters are seen in one of Maudslay's photographs of Chichen Itza inscriptions, and in a figure in Brinton's "Primer of Hieroglyphics."

Mr C. C. Willoughby, one of our most painstaking and skilful students of American antiquities, to whom the specimen was referred, has favored me with the following statement of correspondences observed between these glyphs and those of the Mayan codices:

I have gone carefully over the drawings of the hieroglyphs upon the Vera Cruz stone. Omitting the numerals, I think there are at least eleven characters which also occur in modified forms in the codices, as follows:



a *b* *c* *d*

This (*a*) is probably the Sun God (God G) of Schellhas. He is distinguished by the flowing beard and the large nose ornament. His Mexican counterpart, Quetzalcoatl, is also bearded. Drawings of two heads of God G from the Dresden Codex are given (*b*, *c*), and one of Quetzalcoatl (*d*) for comparison.



e *f* *g* *h*

Winged Sun Symbol (*e*): This sign appearing above the head of the Sun God upon the stone is especially noteworthy, as the sun sign *Kin* forms

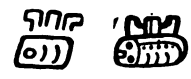
the chief factor in God G's hieroglyph in the codices. The three other winged sun-symbols shown (*f*, *g*, *h*) are from Troano-Cortesian Codex 109–10 (III, IV) and Dresden Codex 15, 57.



i *j*

The main element of the hieroglyph of the Goddess with the Features of an Old Woman (Goddess O) of Schellhas, distinguished by the corkscrew curl and the "wrinkles of age about the eyes." (*j*, Dresden Codex 2 et seq.)

Hieroglyphs resembling a caterpillar: In the codices the head is shown both in profile and turned on one side. Variants of the superfix are given in the examples from the manuscripts (*m*, *n*, *o*). (Dresden Codex 62, Peresian Codex 18.) Two of three variants (*k*, *l*), somewhat modified, appear upon the stone. The U-shaped affixes are used in various positions in this carving and also in the codices. In the latter they sometimes surround a hieroglyph.



k *m*



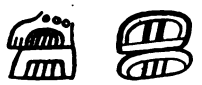
l *n* *o*



p *q*

The human hand holding a fruit-like object. The hand is reversed on the stone (*p*). (*q*, Dresden Codex 23.)

A compound hieroglyph, two elements of which may be equivalent to the common form *s*. This character (*s*) occurs twice in Peresian Codex (11.12) with the following prefix  in addition.



r *s*



t *u*

This (*t*) may be equivalent to *u*, which is found in all the Mayan codices and is used generally with an affix. (Troano-Cortesian Codex 38 XIX.)



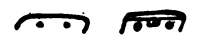
v

The day sign *Muluk*. Probably thus used on the stone as it is followed by the numeral 8.



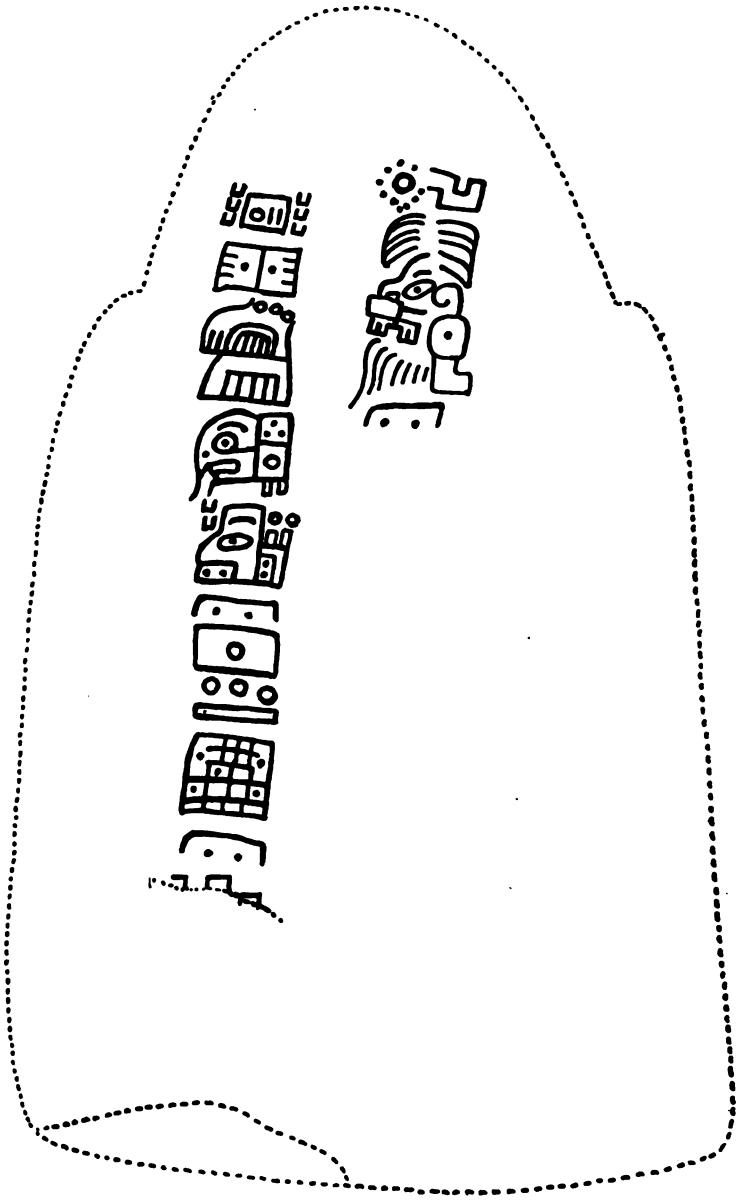
w

Flint knife, often used as an affix.



x

A common affix and sometimes used alone.



NEPHRITE STATUETTE FROM SAN ANDRES TUXTLA, VERA CRUZ
REAR VIEW



NEPHRITE STATUETTE FROM SAN ANDRES TUXTLA, VERA CRUZ
REAR VIEW



There are several others which may be variants of glyphs in the codices, but the resemblances are not so close as in the examples cited. Technically the execution of the characters upon the Vera Cruz stone is very inferior. It seems to me however that they are undoubtedly Mayan.

Drawings of the glyphs were forwarded to Mr Charles P. Bowditch, who is a prominent student of our native writing, and the following statement was kindly furnished by him:

I have made careful researches regarding these glyphs and have compared them with a card catalogue (which I have had made for my own use) of all the glyphs contained in the three known Maya manuscripts. The result is the same as I should have reached if I had trusted to my memory alone, for I can not find any real likeness between the two kinds of glyphs. There is one glyph on the stone — that on the right shoulder of the full-faced drawing — which suggests the day *Kan*, but this likeness is by no means striking.

Neither do the glyphs recall to me those of the inscriptions found in the state of Chiapas and in Guatemala and Honduras. Nor is there much similarity between the glyphs on the stone and those found on the nephrite slab of Leyden. The glyphs are much squarer than those of any of the manuscripts or inscriptions alluded to above. Indeed, in their general form they are more like the day signs of the Books of Chilan Balam, published in pamphlet form by Dr Brinton many years ago.

The initial dates of the inscriptions are designated by glyphs denoting periods of 144,000 days (cycle, so-called), 7,200 days (katun), 360 days (tun), 20 days (uinal), 1 day (kin), and with these are numbers, denoted by heads or by dots and lines, which show how many of these periods are to be taken. Nearly all the inscription dates have the number 9 attached to the cycle sign. In the manuscripts the dates or long numbers are denoted merely by lines and dots, the relative positions of these, one above the other, giving the different values to them. The set of dots and lines upon the full-faced drawing recalls the large numbers of the Dresden Codex.

The cycle number probably appears thus ⁘ It would seem as if the left hand dot of the 3 did not have a relation to the line below, since it is out of line with the other dots, and the position of the two right-hand dots would seem to show that there should be two other dots on the left. Inspection would show whether there had been a scaling of the stone here. If the other two dots belong here, we should have 9 cycles — a number which appears in the very large majority of Initial Series. I do not think that the katun number is 6. It would seem from

the photograph as if the darker dot on the right was a part of this number and that the dot, which would be used in making the katun number does not belong to the line below. Below this katun number are a variety of dots, but I think your decision as to the tun number is probably right and that this number is 2. The uinal number is probably 4 and the kin number is 17. What the perpendicular day number at the bottom is, I am a little in doubt. It may very well be 8 or possibly 7, or again all the dots on the left may be part of the curved line of dots and may not relate to the upright line; in this case, the day number would be 5.

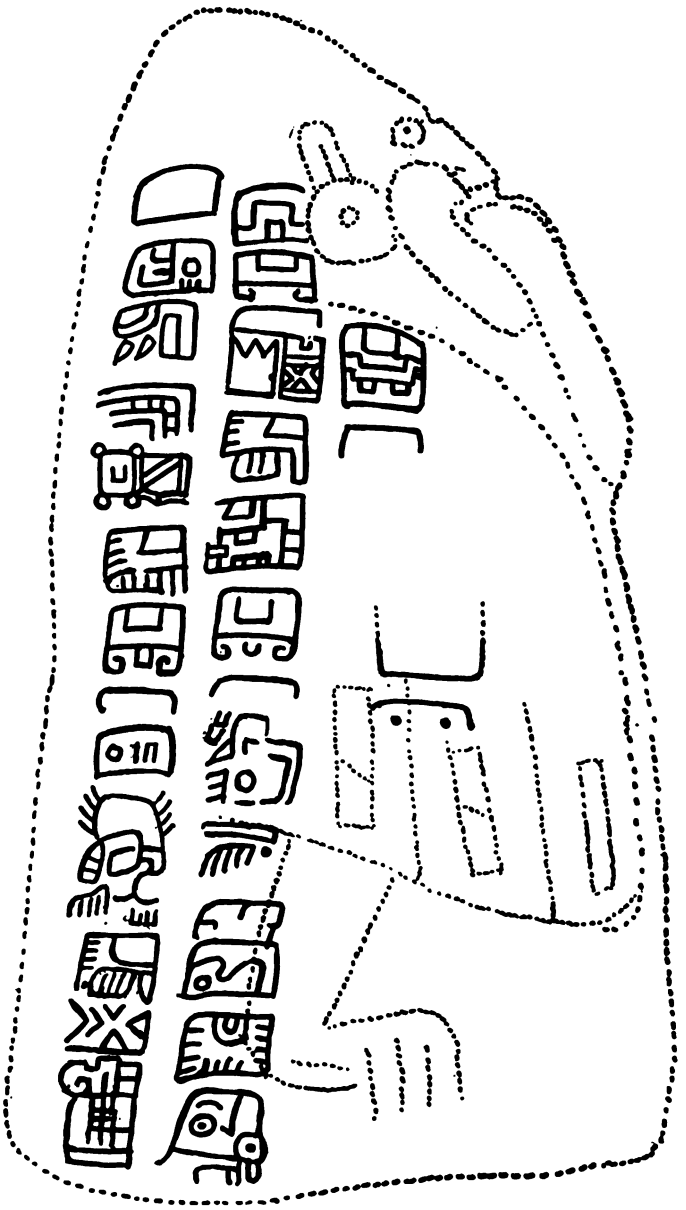
In favor of your interpretation, it is true that the long number 8. 6. 2. 4. 17 brings us to the date 8 Caban 0 Kankin, and this agrees with the day number, if we consider that as 8. I doubt, however, whether the inscription is clear enough to make it possible, in the absence of the month glyph, to determine with certainty what this date is, or, indeed, whether it takes the place of an Initial Series in the inscriptions.

Photographs of the statuette, together with drawings of the glyphs, were placed in the hands of Mr Sylvanus G. Morley of Cambridge, and he has placed the following well-considered observations at my disposal:

One striking feature of Maya chronology is that almost all of those dates which it seems possible to regard as actually historical and not merely traditional or mythological, fall in the 10th cycle after the normal date 4 Ahau 8 Cumhu, or after 9 cycles had elapsed, and in the progress of the 10th. In this 10th cycle apparently the hieroglyphic system, as developed at Palenque, Yaxchilan, Piedras Negras, Quirigua, Copan, and other points in southern Chiapas and Guatemala, had already reached a highly conventionalized form.

The beginnings of this system, however, have never as yet been found; but that there must have been less elaborate forms, showing the course of development through which the glyphs had passed to reach the highly conventionalized state to which they had attained in their 10th cycle, and as we now find them, seems to be beyond question. Such a system could not have sprung into existence fully formed. Its very complexity precludes the possibility. A long period of time was necessary for such intricate forms to have been evolved.

For this reason the statuette under discussion is of particular interest; for if I read this Initial Series aright it falls in the 9th cycle, or after 8 complete cycles had elapsed from the normal date. The date of this statuette then becomes the earliest historical date we have; if we eliminate



NEPHRITE STATUETTE FROM SAN ANDRES TUXTLA, VERA CRUZ
SIDE VIEW



NEPHRITE STATUETTE FROM SAN ANDRES TUXTLA, VERA CRUZ
SIDE VIEW



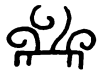
the Initial Series of Palenque in the 2d cycle, and the Initial Series of the east side of Stela C at Quirigua, which opens with the normal date. Both of these, however, are probably of traditional, if indeed not mythological connection, carrying time backward 3,200 years prior to the 10th cycle in which most of the dates occur.

The only other series which falls in the 9th cycle is that of the Leyden Plate, also of nephrite. This has the initial series 8–14–3–1–12. 1 ? ? Yaxkin, — which series in fact leads to 1 Eb 0 Yaxkin, a date nearly 161 years later than that of the Tuxtla statuette. Moreover, on comparison with each other the glyphs of the Leyden Plate and the Tuxtla statuette manifest certain similarities, not to be accounted for solely on the grounds of the likeness of the material upon which they were incised, but due in part, I would suggest, to their relatively greater antiquity. Which hypothesis is supported by :

1. The actual place of the Initial Series of these two specimens in the ancient chronological calendar.

2. The general crude appearance of the cutting in both specimens, due in part no doubt to the texture of the material, but also due to the greater antiquity of both, the Tuxtla statuette antedating the beginning of the 10th cycle by 280 years, the Leyden Plate by 120. Moreover, a hundred years had already passed in the 10th cycle before the dates become frequent, making the Tuxtla statuette 380 years, and the Leyden Plate 220 years older than the florescence of the Maya culture, if that florescence is to be judged by the period in which the greatest number of dates fall. This would give the Leyden Plate a position midway between the Tuxtla statuette and the beautifully executed stelæ of Copan and Quirigua, etc., a position it would seem to occupy very naturally from a study of the glyphs themselves. While the face for the uinal period in the Leyden Plate shows the characteristic backward curling fang of the later uinal glyphs, and the general appearance of the other period glyphs are in general accord with the corresponding period glyphs of the Copan and Quirigua stelæ, the character of the drawing of the Leyden Plate more closely resembles that of the Tuxtla statuette with its crude lines, than the superior work of the above-mentioned stelæ.

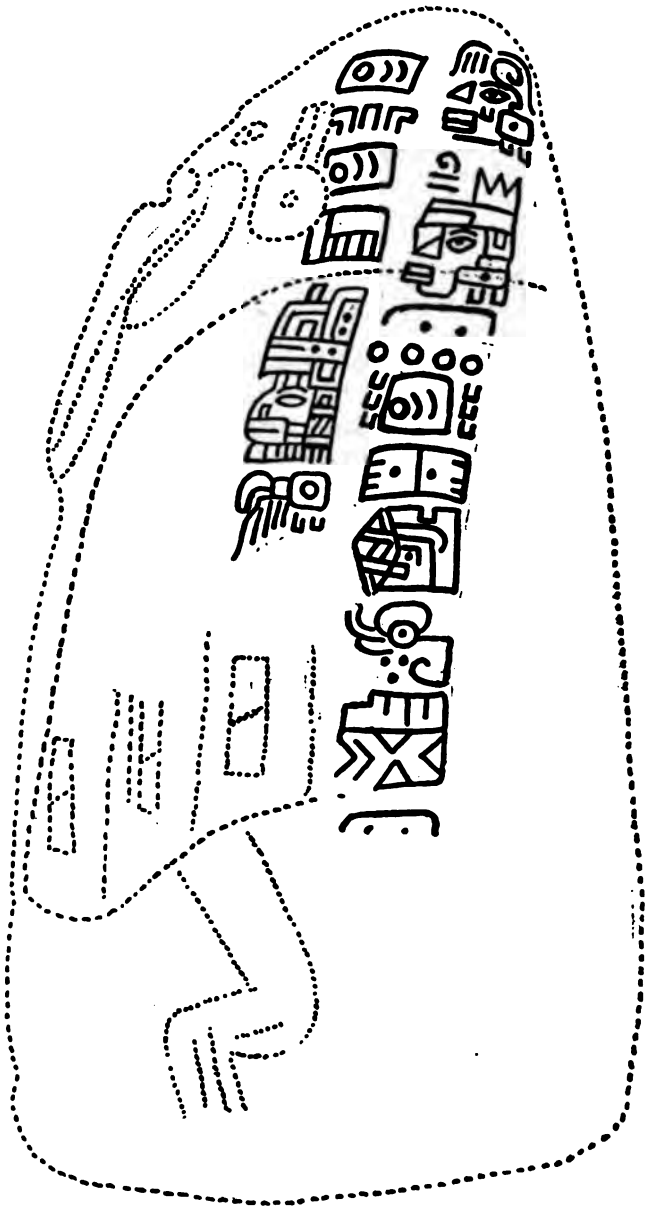
3. The general similarity of the trifoil superfix of the introducing glyphs (Goodman's Great Cycle glyph) of the Initial Series on both objects.



TRIFOIL OF TUXTLA SERIES



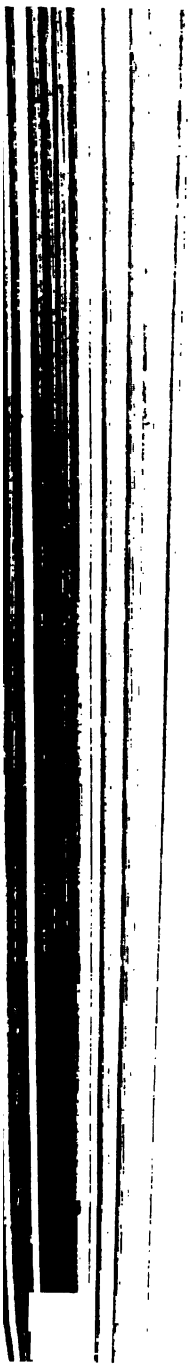
TRIFOIL OF LEYDEN PLATE SERIES



NEPHRITE STATUETTE FROM SAN ANDRES TUXTLA, VERA CRUZ
SIDE VIEW



NEPHRITE STATUETTE FROM SAN ANDRES TUXTLA, VERA CRUZ
SIDE VIEW



may well be that both the Caban and the Kankin appear here in an archaic form.

3. There is no month glyph numeral in the column to the left, and there would not be as the month numeral is 0.

Against these may be advanced:

1. The zero of the month sign does not appear, so far as we know, in the column of glyphs to the left.

2. If the face to the left of the 8 is Kankin, it is an unknown form of that glyph.

3. The practically uniform custom in reading Maya glyphs is to proceed from the left to the right and not vice versa.

Nevertheless it seems to me that, inasmuch as the numeral 8 does not occur in the vertical column of the period glyphs, but to the side and against a glyph, unrecognizable though that glyph may now be, and since the day numeral to which the series as now given would lead, is 8, the burden of proof rests with those who would not see in this an Initial Series, always providing that the numerals as identified above are the ones that were originally incised on the statuette.

Of the other glyphs there are but few that it seems possible to identify with any degree of certainty; there are a few 'kins,' a sign that looks like a Kan perhaps, and the numerals 4 and 7. The following signs occur more than once:

 = 3

 = 2

 = 5

 = 3 probably a variant of the preceding

 = 2 perhaps two Imix signs placed top to top

 = 3

 = 3

 = 2 probably a variant of the preceding

 = 2

and 5 or 6 other different faces.

The others are, so far as I know, unrecognizable, but it seems rather significant that about half the glyphs occur more than once.

Finally, the question arises, that if this statuette may be safely garded as having been found in situ in the region of San Andrés Tux and if the Initial Series is correct as rendered above, may not this be region to look for the earlier forms, at least, of the Maya glyphs, if for their actual beginnings? Unfortunately the exact locus of the Ley Plate is unknown, but from the foregoing I would suggest that it marke transition from the Tuxtla statuette on the one side to the more comp forms of Copan on the other, and points to the fact that there was a c tinuous development, on the chronological side at least, from the statu under discussion to the florescence of the Maya Culture as represented the monuments of Palenque, Copan, Quirigua, and elsewhere.

The specimen has been examined also by Professor Marsh H. Saville, who is probably more intimately acquainted with anci Mexican art than any other American student, and he does not he tate to pronounce it genuine and of exceptional interest. T same view is taken by Dr Charles Peabody and by Professor E. Hewett.

The material of the specimen as determined by Dr Wirt Tass mineralogist of the National Museum, is a variety of nephrite jade. It is pale grayish-green in color, somewhat mottled, a quite opaque. The stone is flawed in places, as if exposed at so time to a considerable degree of heat.

It appears that the figure in its conception and execution is w within the range of ancient Mexican achievement, and it presents features suggesting foreign or non-aboriginal influence. The gene shape has been laboriously worked out from a block of irregul conical outline, the unevenness of the surface not having been ful removed, especially on the front and back. The under surfac which is somewhat irregular, shows the characteristic markin produced by primitive methods of sawing hard stone. The origin under surface of the mass was probably uneven, so that portio had to be cut away to provide a suitable base for the figure. T sawing extended only partly through the stone, the remaind having been broken and afterward partially smoothed down.

The glyphs in all cases were added after the shaping of the vario features of the image was complete and after the surface had be polished. The lines representing the various features of man ar bird are mostly broad and shallow, and have been rubbed down un

even and smooth. The glyph lines are narrow and not well polished. They have been engraved with a pointed tool without the aid of mechanical device, and such parts as remain unfinished show the irregular scratches of the tool, possibly a bit of quartz. That there was great difficulty in cutting the curved lines of the polished surface is indicated by the imperfections of the curves as well as by the general squareness of the glyphs. The dot depressions were probably made with a round-pointed revolving drill, and are polished.

It is noted that some parts of the surface are stained and roughened by weathering or by chemical changes, and these effects are apparent alike on the general surface and in the depressed lines of the figure and the glyphs.

Although the specimen has to be presented without satisfactory determination of its origin, it is to be hoped that its publication may be the means of eliciting further information on this point. If its authenticity should be finally established, it must prove a strong incentive to systematic research in a culture area as yet almost untouched by scientific investigation.

The Maya family is now resident principally in Yucatan, Chiapas, Tabasco, and in the regions to the south; but one small group, the Huasteca, is found in northern Vera Cruz, and it does not seem unlikely that the entire coast line of this state was at one time or another occupied by this people, hence the inscribed figurine may be regarded as a probable relic of the former Maya occupancy of the region about San Andrés Tuxtla.

If, therefore, the specimen is genuine, it may be confidently anticipated that, when investigations extend finally into this part of the Tierra Caliente, other examples of kindred glyphic art will be brought to light, thus adding a new chapter to the interesting history of the Maya culture.

BUREAU OF AMERICAN ETHNOLOGY,
WASHINGTON, D. C.

ARCHEOLOGY OF THE PONCA CREEK DISTRICT, EASTERN NEBRASKA

By ROBERT F. GILDER

In the fall of 1903 I commenced a study of the surface archeology of the northern portion of Douglas county, Nebraska, by collecting artifacts from the cultivated fields of that locality. Several months were spent in examining the ground, and although the net result was small, I was able to gather a collection of scrapers and the smaller projectile points, besides a large number of potsherds ranging from bits the size of a dime to others as large as one's hand, and about half a peck of flint chips and flakes. Most of these objects were taken from one field in what I have designated the Ponca Creek district.

The following spring I turned my attention to locating a large number of saucer-like depressions in the earth, known locall as "buffalo wallows," in reality sites of aboriginal earth lodges. I found that these circles began just inside the limits of the town of Florence and extended about seven miles northward. Almost every circle had been dug into, although in each instance the excavation had been confined to its center, the other portions not having been molested. Wherever excavation had been recent I found small sherds, and flint chips, ashes, and charcoal.

Florence, Nebraska, for the greater part is situated on a bench thirty feet above the valley of the Missouri river, which forms the eastern boundary of the city. Near its northern limits Mill creek flows through from west to east and empties into the Missouri. North of this stream the land begins to rise into high ridges, with deep valleys between. The flood-plain of the river lies at the right hand, or to the east, along which a road runs northward close under the bluffs. These ridges are parallel, or nearly so, to the river valley, and half a mile from Mill creek they reach a height of 160 feet above the river level, continuing for a mile when an east-and-west

valley cuts them; then they rise again to about the same height, and again are intersected by deep gorges.

The geology of these hills is simple — about 150 feet of bright buff loess resting upon fifteen to twenty feet of glacial clay and drift, beneath which is carboniferous. The loess carries no stones, but lime tubes are met with at all elevations.

The first house circle is found on the bench just north of Mill creek, close to the bluff and river, below the first ridge. The second appears almost at the top of the first ridge north of the main street of Florence, an extension of which would cut directly through the eastern side of the circle, the line fence intersecting the circle in its center. The third circle of this series lies 500 yards farther north on the highest part of the ridge; the fourth is half a mile west and north of the third. These four sites average about 55 feet in diameter. That there are other sites closely connected with and between these there is no question, but cultivation and the erosion of years has brought them to the level of the surrounding surface and therefore they are indistinguishable. Farther north the timber with which the slopes of the ridges are covered gradually increases and covers their summits as well. This land has been for years the property of one family and very little of it has been cultivated, so that the farther north one goes away from Florence the more numerous and clearly defined are the house sites.

Ponca Creek district lies on both sides of the stream of that name, two and one-quarter miles north of Florence. A valley cuts in from the west, and although the sites are more numerous on the northern rise from the creek there are several large and well-defined lodge sites on the ridges to the south.

The most extensive collection of house sites, and the only one showing the characteristics of a village, extends up the slope from Ponca creek to the north and caps the ridge. Skirting a road parallel with and north of the creek is a field that has been farmed intermittently for almost a century, the original clearing having been used by John P. Cabanne, near whose fur-trading post site the field is situated, and is probably the first ground tilled by whites in the present state of Nebraska. The field is 200 yards wide and 500 long, running with the road and creek. In the center of the field,

where a ridge begins its rise that terminates two miles northwe
ward is a very large house site, but its circular line is cut and
surface is nearly that of the surrounding field. The plow h
brought to the surface spear and arrow points of flint, grooved sto
hammers, celts, scores of hide scrapers, and innumerable potsher

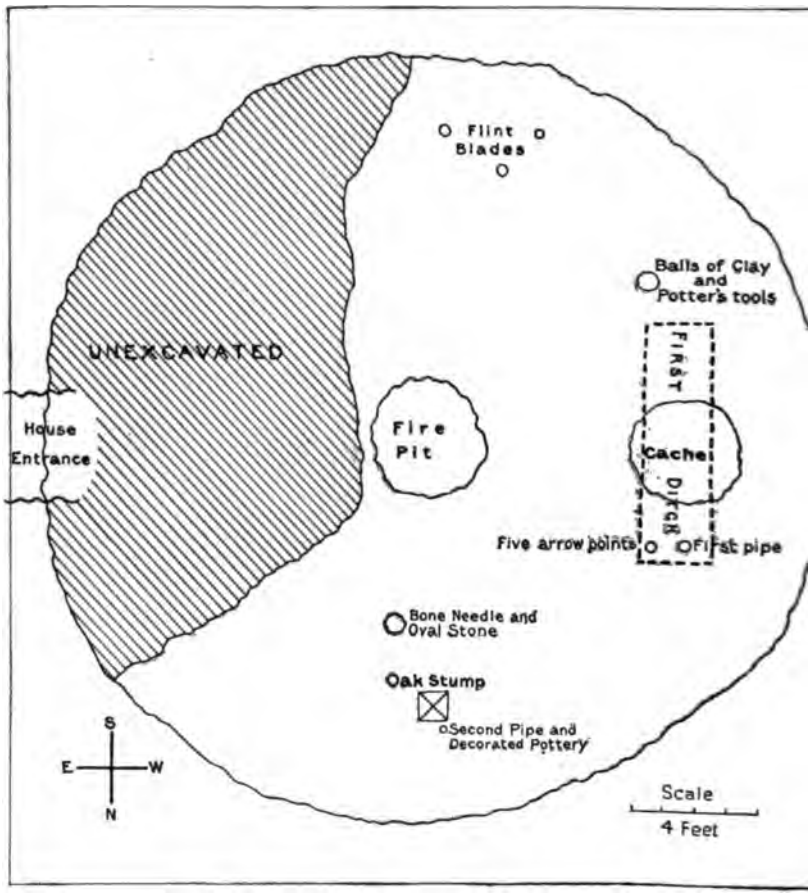


FIG. 43. — Ground plan of house site, Work No. 1.

Following the ridge up into the timber small circles are found c
the slopes, and at its summit are seven, the largest measuring eight
feet in diameter, with its center at present four feet below the su
rounding level. A heavy growth of timber now covers the enti

village. As in all the others some one had dug down to the central fireplace of the largest circle.

In the spring of 1907 I dug a trench from the old excavation westward to a point five feet from the rim ; then northward an intersecting ditch twelve feet long and five deep. At the beginning of the second ditch remains of a post were encountered, consisting of wood powder surrounded partly by thin bark. The post apparently had been six inches in diameter. Six feet farther on another post was found, as much deteriorated as the first. Potsherds, charcoal, flint chips, and a large flaked flint blade were here procured.

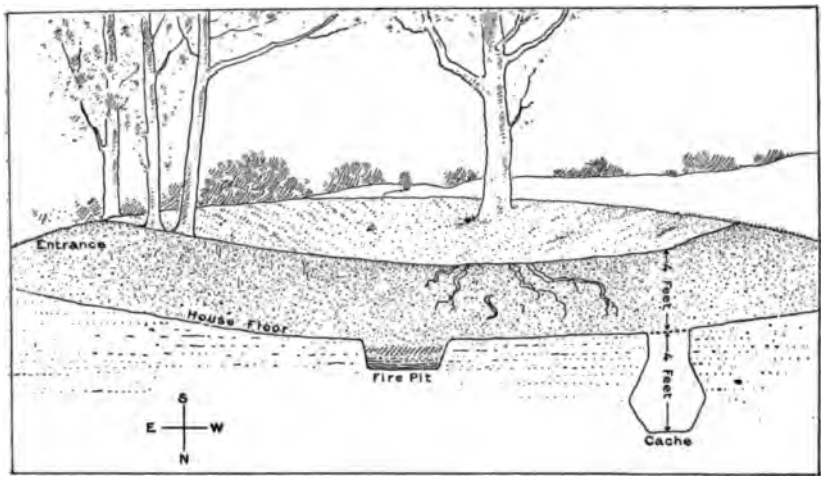


FIG. 44. — Sectional view of house site, Work No. 1.

A hundred yards east of the circle last described was another, very ancient in appearance, its outlines being barely discernible. Some amateur had dug down to the fireplace, but otherwise it was intact. This site, which I shall designate as Work No. 1, was about thirty feet in diameter. On the western side, close to where the slight dip was made from the surrounding surface, I began operations in April of this year, starting a trench at the southwestern end of a square and extending it northward seventeen feet, with the intention of carrying it through the circle to the east its entire width of seventeen feet and down below the floor of the house. After

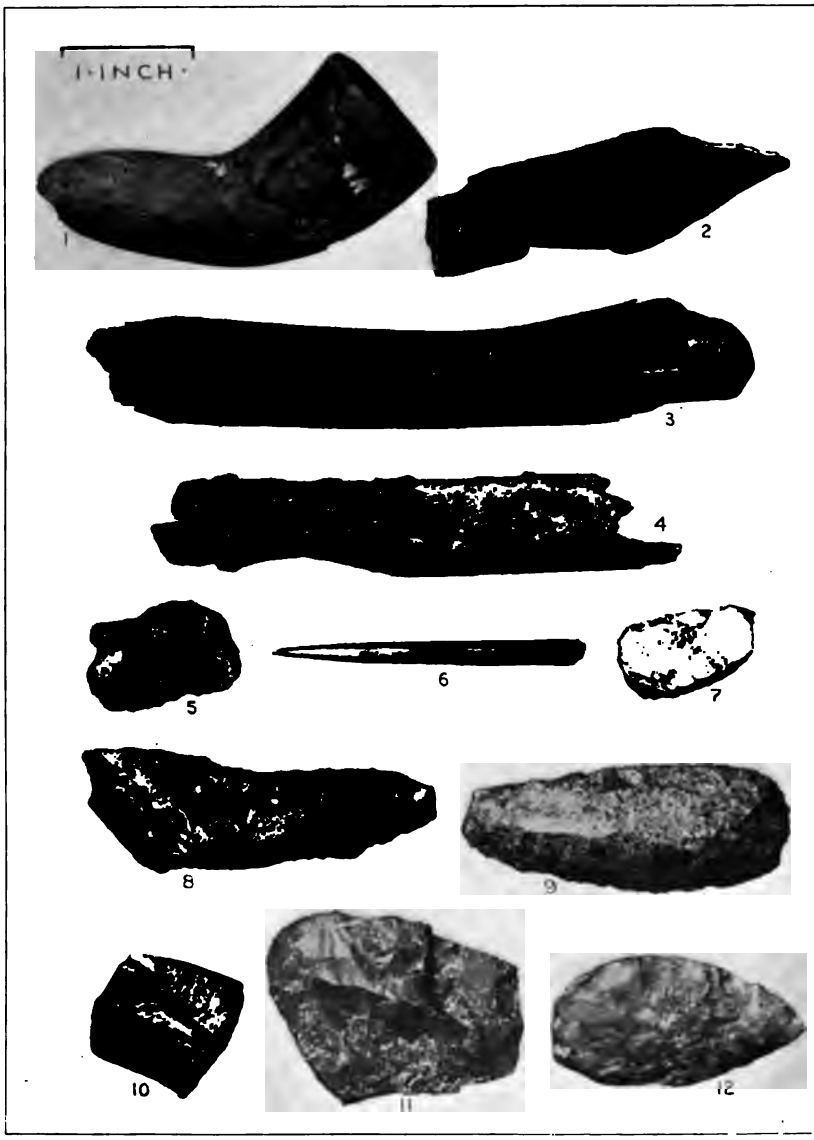
digging through two feet of dark loam a mixed light and dark soi was encountered eighteen inches deep, then six inches of lighter-colored soil or loess slightly mixed with dark soil packed quite hard. Beneath this was the floor of the dwelling.

Having provided myself with a sketch of Maximilian's plan of a Mandan dwelling, I kept a close lookout for a cache. In digging the first trench it was noted that twelve feet directly west of the fireplace the earth was not so compact as were the other parts of the floor. At the northern end of the trench a dark clay tube pipe, lying upon the floor, was found, and near it were five arrowpoints. With a sharp spade, made expressly for the purpose, I shaved down the sides of the ditch, going beneath the floor, until the trench was four feet wide. All through the floor, which was of much darker material than the earth immediately above it, and a foot thick, were potsherds, chips of flint, and bits of charcoal. When the trench became sufficiently wide to admit of careful work I returned to the softer spot behind the fireplace and excavated there. The soil was yellow loess, packed reasonably hard, but not so hard as was the floor of the dwelling, and every shovelful showed that it had been moved. The sides of a cache were soon encountered and followed to the bottom at eight feet below the surface of the ground and four feet beneath the house floor. In the cache were the following objects:

Five arrowshaft smoothers, six bivalve shells, one shell ornament, sixteen flint hide-scrapers, twelve flint blades, five broken flint blades, four triangular flint blades, one large flint blade, seven flint arrowheads, two large narrow flint blades, one flint drill, two pieces of red ocher, one paint stone, a horn chipper or flaker, a clay bead, a drilled antelope horn, a large bone awl, a sawed elk horn, three bone needles, six small bone implements sharpened to a point, a bone spear barb, three "ivory" stones from fish heads, five large bone hoes, one sandstone for pointing bone implements, half a bushel of potsherds, several large pieces of earthen vessels, including rims and a third of the bowls, and a dozen shank and rib bones of an elk or a buffalo (plates XLIII, XLIV).

Three feet southeast of the cache were found the following objects:

Six balls of clay, a ball of lime, a bone pestle, a small bone hoe or potter's tool, twelve pieces of granitic rock that had been burned,



OBJECTS FROM FLOOR OF HOUSE SITE, WORK NO. 1, PONCA CREEK DISTRICT

1, Tube Pipe; 2, Bone Punch; 3 and 4, Bone Gouges (No. 3 has been drilled through at one end); 5, Flint Scraper; 6, Bone Needle; 7, Small Flint Scraper; 8, 9, 10, 11, 12, Flint Blades.



four pieces of sandstone, and five pieces of an unburned pot. There was evidence of fire on the surface of the floor.

On another ridge across the valley through which Ponca creek flows—five hundred yards south of Work No. 1—I began Work No. 2 in the same manner, except that the trench was run too near the western rim of the site. Thinking that perhaps there was no cache in this site, I went to the northern side and trenched east and west ten feet, getting below the house floor. At three feet the floor was reached and the trench was being extended south of the center of the site when a small cache was encountered, the bottom of which was two feet below the house floor, where, beneath a stone the size of one's two fists, was found, nicely laid down, nine unnotched arrowpoints, seven narrow flint knives of particularly fine workmanship, and three celt hatchets—one of diorite, one of greenstone, and the third a narrow implement of white flint. The diorite and flint hatchets were chipped, while the greenstone implement was ground. A large mother-of-pearl shell was also in the cache (plate XLIV).

Returning to the first trench I worked toward the center of the site, and on proceeding about two feet discovered the entrance to a cache, the bottom of which was eight feet below the surface of the circle and not more than three feet in diameter. From this cache the following articles were taken:

Four arrowpoints, eight bivalve shells, four of which had been drilled through at the hinge; three shell beads drilled from each side (the shells and beads lay on the bottom of the cache among the fragments of a small pot); one oval shell ornament; an egg-shaped pipe bowl; three large pieces of pottery, showing rim designs and lugs; four chipped blades, and a kernel of corn, somewhat parched (plates XLII, XLIII).

Work No. 3 was begun in a very unpromising circle, twenty-five feet in diameter, situated upon a steep slope of a ridge and about a hundred feet from the top of the hill, which rises to an altitude of fifty feet more. Thinking that perhaps the entrance would be upon the lower side, I began work on the south or up-hill side, but no cache was found, although a trench six by twelve feet was cut. Operations were next begun on the western side, and the cache was soon discovered. Bits of pottery were observed when the floor

was reached some three feet below the surface of the ground, and a section of a large bowlder of crescent shape was found. The nex shovelful of earth brought out a fish made from a mother-of-pear shell, the head being portioned off by incised markings on both sides. Eyes had been drilled part way through the shell, and nea

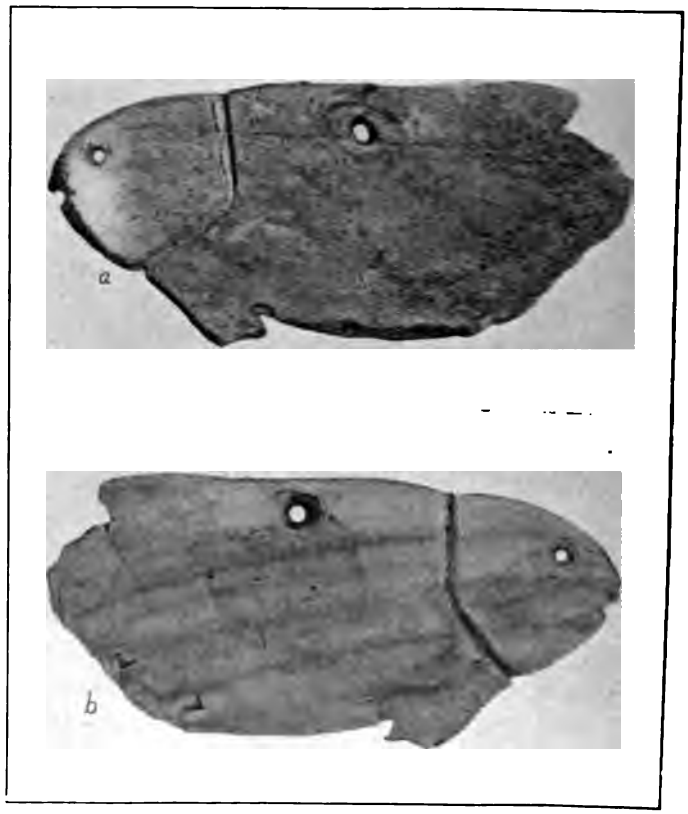


FIG. 45. — Shell pendant found in Work No. 3; natural size. (*a*, concave side; *b*, convex side.)

the dorsal fin a hole had been drilled evidently for the purpose of suspending the object as a pendant (fig. 45). Another small shell that had been ground down to shape, and several large pot rims and sherds, including one lug, were found. This circle was situated on a bluff overlooking the old bed of the river. Works Nos. 1 and 2 were about a quarter of a mile back from the old stream bed.



OBJECTS FROM WORK NO. 1, PONCA CREEK DISTRICT

Bone Hoes, Bone Punches, Pierced Antelope Horn, Flint Blades, Scrapers, Projectile Points, Dakota Sandstone Arrowshaft Smoothers, and Perforated Shells and Shell Beads.



At the summit of the ridge, a quarter of a mile south of Work No. 3, operations were begun to the west of a circle 44 feet in diameter. The cache was soon found, but a single broken arrowpoint and a small potsherd were the only objects unearthed. The bottom of this cache was five feet below the floor level, and the house floor was three and one-half feet below the surface of the circle.

This practically ended my spring work.

The first of September of the current year I commenced work at the site in the northern limits of Florence by digging a trench, eight feet long and eight feet deep, on its western side. The result showed three periods of occupancy of the site, indicated by the finding of three distinct floors about eighteen inches apart. These floors were strewn with charcoal and with bits of flint and sherds, while the earth between them was packed hard and contained flakes of charcoal.

The exposed situation of this site caused me to move my operations back into the Ponca Creek district, so that the isolation might prevent others from destroying whatever results I might obtain if disturbed during my absence. Consequently operations were recommenced where the excavations had been suspended in Work No. 1. These consisted of lengthening and widening the first ditch so as to cover more than half the entire circle. As this work progressed a bone gouge was uncovered which had been worn round and smooth at one end. This implement had been made by splitting the tibia of a deer or an antelope. A hole had been drilled through the bone, and the gouge shows two half-circles where the drilling tool had passed through (plate XLII, 3). Another tube pipe, smaller than the first, was found (plate XLII, 1); it still contained the carbonated lining, the result of long use. A fine flint blade, two scrapers, and a nicely sharpened flint knife were next found, and then a lug with a human face modeled upon its outer curve (fig. 46). The nose is large and

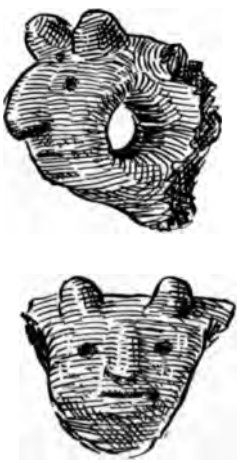


FIG. 46.—Ornamental pot-lug. (One half nat. size.)

hooked, lips thin, chin receding, eyes round and staring, and over the latter two short horns protrude. The face is quite different from that of other pottery decorations that have come under my notice. All of these objects were found beneath the roots of a large oak tree that had grown from the right of the fireplace when facing westward. It was impossible to locate the posts that must have supported the rafters of this dwelling. There was no sign, not even a slight discoloration of the earth, where the posts are supposed to have stood. Large and small drift spalls, nearly all of them fractured, were found scattered over the floor and beneath it. The ash bed was more than a foot deep.

All the house sites examined were at least a foot lower in the center than at the rim, and some were four feet deep. The same contour applied to the house floor, although where the circle was nearly filled with earth the saucer-shape of the floor beneath was more pronounced than on the surface.

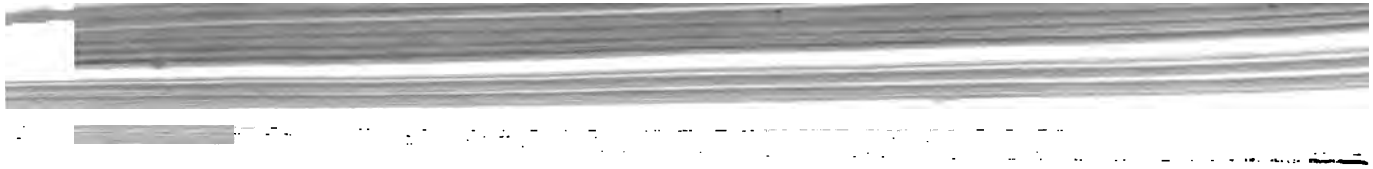
One of the difficulties at first encountered was the meeting with three distinct types of dwelling sites. My object primarily was to carry on the work of exploration in sites, similar to those described which offered surface evidences of being older than the others. One site, instead of being a circular depression, is a circular mound. In two of the latter opened and examined, no pottery was found, and each had in the center a fireplace in which were buffalo and deer bones, but no stone tools or chips. Another such mound produced crude flint implements, a little pottery, and what appear to be bits of human bones, the ends of which bear marks that are seemingly the incisions of human teeth. Some of the bones had been split and one had been incised, presumably with a flint blade. I was unable to finish the exploration of this site, but intend to do so when the opportunity affords.

Pottery. — The pottery obtained in the caches and house sites hitherto described is of marked excellence. The rims of the vessels exhibit many decorative designs, and the bowls the marks of the grass paddle as well as smooth and incised surfaces. From Work No. 1, twenty-seven rims of more than a dozen different patterns were taken (fig. 47). Eight feet from the fireplace, in the southwestern section of the circle, were a small hoe-shaped implement



OBJECTS FROM WORKS NO. 1 AND NO. 2, PONCA CREEK DISTRICT

From Work No. 1: Potsherds, Lugs and Rim Designs, Tube Pipe, Balls of Clay and Lime, Small Bone Implements and Shell Ornament. From Work No. 2: Long Flint Blades, Triangular Flint Blade, Projectile Points, and Celt Hatchets.



made from a scapula, probably of an antelope; five balls of clay; two pointed splinters of bone, the sharpened ends of which show use; a dozen fired granite spalls, which could be easily crumbled in the hand; and a ball of lime. Three of the clay balls are mixed with lime, probably for the purpose of tempering the clay. Lying

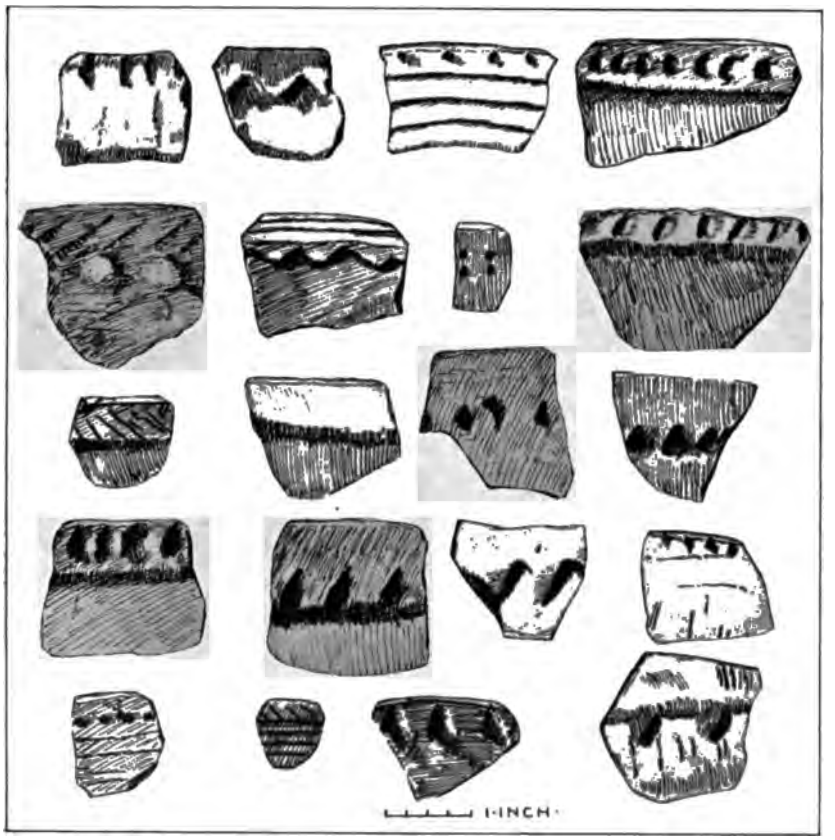


FIG. 47.—Detail of rim designs, Work No. 1.

beside these objects were five pieces of an unfired pot. One of the clay balls retains what seems to be the imprint of the potter's fingernails.

Nearly all the finished pottery is in a good state of preservation. No whole vessel was found. To one piece of very heavy pottery,

about two-thirds of a pot that would probably have held four g lons, one-half of the rim adhered. One piece, larger than a ma hand, appeared to have been rudely glazed. This sherd is o reddish-orange color on the outside, and although it was accide ally dropped upon a bare floor it did not crack. There appears be almost as much granitic binder used in the ware as there is clay.

Of the two tube pipes one is of dark bluish clay while the ot is smaller and of much lighter color. The smaller or stem end w evidently placed between the lips of the smoker, the apertu through which the smoke was drawn being too small to admit of t insertion of a stem.

The bead is of very light-colored clay and appears to have be made in two pieces fused together probably by fire.

The pot lug decorated with the representation of a human fa is unique. The front view gives the impression of an owl, but t presence of the hooked nose, thin lips, and wide mouth, benea which is a well-rounded but weak chin, rejects such an assumptio the only feature at all resembling an owl being the two protube ances over the eyes, which, in an owl, range backward, while tho on the lug incline forward.

The pottery is well burned and was made in many sizes — t capacity of the largest pot was perhaps four gallons. One sm neck of a pot, with an opening not larger than a common lead penc was found. Incised designs are sometimes found on sherds, whi the marks of a grass-wound paddle are of frequent occurrence; b by far the larger number of sherds are devoid of markings and a finished smooth. The incised markings on the bowls of the po could hardly be called designs, but those on the rims are of mo systematic occurrence.

Showing the sherds to a friend who was formerly a gold pro pector, he called my attention to several small particles in many them which looked like gold, and upon my request he extracted few and submitted them to a test which proved beyond questio that they are flake gold. The question of finding gold in thes sherds is easily answered when one considers that the river bluffs a the base of which the aboriginals secured clay for pottery are withi

a few hundred miles of gold-bearing mountains, and gold flakes are occasionally washed from the sand of both the Missouri and the Platte at the present day, it having probably come down in the sand-laden waters of these rivers during the annual spring floods.

Stone Implements. — The flint used in the implement making is of several kinds. Some of the longer knives are made of a dark

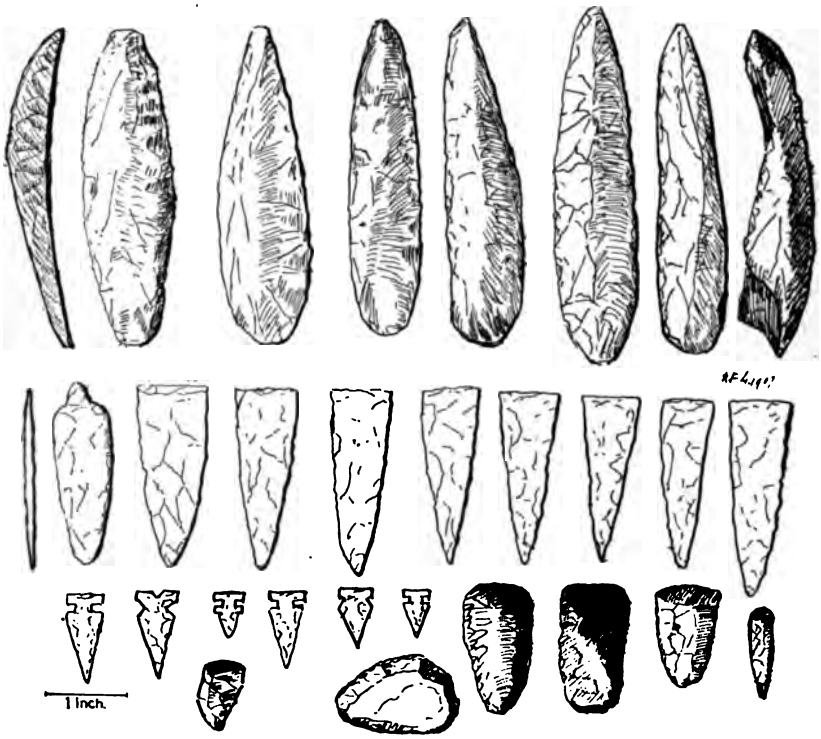


FIG. 48. — Flint blades, projectile points, and scrapers, from cache, Work No. 2.

flint, almost the color of obsidian, similar to that of implements found on both banks of the Mississippi near St Louis. Other flint resembles the native Nebraska kind found in nodules in many limestone ledges.

The hatchet and several arrowpoints are made of a white or yellowish-white flint, much like the glossy white flint found in Wisconsin.

The arrowshaft smoothers are similar in shape to those foun British Columbia, and are made of a reddish-orange Dakota s stone. The large stone, 4 by 5 inches, used for pointing l implements, is of similar material.

The materials of the diorite and greenstone hatchets are f the glacial drift.

Throughout the whole work spalls were encountered. S are of diorite, while others, and by far the larger part, are of gra rock, sandstone, or pink Sioux quartzite, the last being found in drift in considerable quantities. Many quartzite spalls show fract surfaces, as if rude implements had been in process of making, althc quartzite implements were not found. Large numbers of quar chips, however, similar to those found by the writer on shop in other sections of the West, were encountered in every part of floor. One of the last objects taken from Work No. 1 is a bowlder weighing a pound; this is oval in shape, measuring 4 by inches, and 1 ½ inch thick. One side has been worked smooth, the bowlder appears as if it might have been used in smoothing tery. Other trap bowlders are irregular in shape and no use be assigned to them. One resembles the blunt end of a si hammerstone.

Bone Implements.—All the bone hoes and the smaller im ments, including the pestle, show evidence of having been subje to hardening or tempering with fire. When first removed t were quite soft, but hardened rapidly and in three or four c began to split, necessitating the application of several coats of shel

The needles, awls, and punches are similar to like objects fo on a Mandan village site in North Dakota by an expedition fi Harvard University in 1906.[1]

The so-called "bone" pestle is actually a piece of deer an smoothed and beveled on each end; it is five inches long and inch in diameter, and both ends are worn quite smooth. It found near the clay balls and potter's tools.

The elk horn referred to as having been sawed may have ser as an implement, but its use has not been determined.

[1] See Will and Spinden, The Mandans, *Peabody Museum Papers*, vol. no. 4.

Among the articles procured in Work No. 1 is a pointed horn implement, the smaller end of which is the size of a lead pencil, while the opposite end is seven-eighths of an inch in diameter (fig. 49). The only use to which it can be assigned is that of flaking flints.

Paint-stone and Pot. — The paint-stone referred to in the list of objects taken from Work No. 1 is an irregular block of sandstone, little more than half an inch thick, with its surfaces somewhat roughened. When found it was covered with dark red ocher, which, on being wet, stained the hands a much lighter shade. Considerable ocher is attached to both sides of the stone.

The paint bowl consists of a sherd about three inches in diameter. A few drops of red paint still adhere to the outer surface, showing that the pigment had been used in liquid form.

Parched Corn. — Two charred kernels of corn were found in Works Nos. 1 and 2. One of these is nearly entire, while the other is but a fraction of a grain and might have been some other seed. The larger grain differs from corn raised in the vicinity today, being much smaller.



FIG. 49. — Implement of horn, probably used for flaking flints. (½ nat. size.)

Charcoal Flakes and Charred Remains. — When once the floor of the dwelling was reached, flakes of charcoal were found, having the appearance of being mixed into the material of the floor. In one place was found what seemed to be the charred remains of a rope of some material.

Character of House Floors. — The floors of the houses seem to have been tamped, being much more compact than the earth either above or beneath, and of a consistency resembling tough dough. At frequent intervals were brownish discolorations as if some article of skin had rotted away there.

Pumice. — In all house sites were lumps of coarse-grained pumice which floats on water. In the burial mounds of the vicinity the writer has also found bits and rounded pieces of the same stone — evidence connecting the builders of one with the builders of the other. This pumice floats down the Missouri river and occasion-

ally can be found along its banks. Lewis and Clark speak of floating pumice, and other early travelers up the Missouri through North Dakota tell of seeing walls of this volcanic rock at one point along the stream. I found but a single evidence that the material had been used for sharpening implements.

Caches. — The caches within the house sites are smaller in diameter near the top than at the bottom, the latter part flaring out somewhat in the manner of a large earthen pot. The bottom of the caches are rounded, and the walls are almost as hard as fired clay. In the very bottom of each cache was a quantity of dust, or earth as fine as dust (not compact as at other points), in which were found small arrowpoints, flint blades, shell beads, and flint flakes. In each case where the cache was found within the house circle it occurred close under the western wall, back of the fireplace and exactly opposite the entrance to the lodge, the latter in every instance facing the east. The apparent great age of the house sites renders a very accurate description almost impossible, but as the work progressed from day to day, notes were made of the conditions as they were found.

Fireplace. — The fireplace was in almost the exact center of the circle. In Work No. 1 the ash-bed was ten inches deep, beneath which were five inches of reddish loess about the consistency of soft brick. The bottom of the ash-pit was about a foot from the surrounding floor surface. No stones encircled the fireplace. As this is not a stony country, it is possible that the custom of encircling the fire-pit with stones, met with farther north, was not in vogue at the time of the occupancy of the dwellings. Very few objects were found in the immediate vicinity of the fireplace, which appeared to be about five feet in diameter.

Dryness of Sites. — The rainfall in this section is slight compared with that of the Atlantic coast, and the elevated situation of the house sites affords excellent drainage. It is true the saucer-shaped depression tends to retain snow and rainwater; but only such as falls within the circle can percolate into the soil, and many times have I worked in the circles after several days of rain, finding the soil entirely dry beneath the grass roots.

Puzzling Features of the Work. — There are some puzzling

features of the Ponca District work, and the conclusions reached tend to prove that the builders of these ancient houses were a sedentary people, living in peace with whatever neighbors they had. The latter conclusion is based on the isolation of a number of large house sites throughout the northern part of Douglas county and the southern part of Washington county. Among the house sites I have found groups of three, four, and five, while in other instances only a single house was found, the latter separated from any others by the distance of half a mile or more. Surely if there had been danger of attack by an enemy, these isolated dwellings would have been the ones to suffer most. It is probable that these houses were inhabited according to a communal system, and it may be that the larger dwellings housed twenty or thirty people; but they were situated upon exposed and easily accessible sites and would have been at the mercy of any considerable foe. This deduction may be incorrect. A mile back from the river, beginning at a point the same distance northward from Florence, the Calhoun road cuts through a large house site. Half a mile north of this site, in a direct line, is another, and the same distance still farther to the north is a third, measuring ninety-two feet in diameter and at present four feet deep in the center. It is situated in a field that has been cultivated for many years, and it was probably much deeper before disturbed by tillage. About this site I have found excellent pottery, some finely-shaped projectile points and scrapers, as well as some very crude implements. There are four smaller circles surrounding the larger one within fifty yards. One mile north of the site last described is a large isolated circle, and there are at least a dozen more still farther north. All of these isolated sites are in a direct line north and south.

All these sites are situated on the highest hills in their vicinity. It may be that these isolated dwellings were thus placed in order to guard the larger aggregations of dwellings nearer the river valley.

Several years of labor in the mounds and circles of this neighborhood lead to the conclusion that at the time the dwellings were occupied these loess hills were entirely devoid of timber. To-day they are heavily timbered, or have been within the last few years. My assumption is that the timber grew up from the valley of the

Missouri. Only a few miles back from the river the vast plains Nebraska begin, and continue to the mountain ranges of Wyomi with occasional small forests along the streams.

On the Iowa side of the Missouri, directly across the valley fr Ponca Creek district, the hill slopes and the ravines are heavily ti bered, but the hilltops bear no indication that they were ever c ered with trees. There are many settlers there to-day who follov the Indians in possession and declare the hills to have been ne timbered. No roots or vegetal mold are found, the buff-yell loess beginning at the very grass roots. Lewis and Clark speak "bald-pated prairies" occurring where the same feature is no to-day.

Were these Nebraska hills barren of timber, the watcher on highest hills, especially from the elevation of his housetop, could for miles in every direction, and the erection of the older dwellii upon these eminences might have been with a view of provid the best possible lookout for game or for foe.

Period of Occupancy — Conclusion. — The period of occupanc the house sites can only be conjectured, but all evidence points their habitation many centuries ago. Twenty yards back of W No. 1 the ground at present slopes away from the site and then ri again several hundred yards farther to the northwest. In all ot directions the ground slopes somewhat precipitously from the s and it cannot be said that the two feet of earth that has formed o the remains of the walls of the earth lodge may be accounted for erosion from higher hills—there are none at this time, and the c tour of the surrounding surface precludes such an assumption.

Had a forest growth covered the site and its vicinity for a per of five hundred years, would the accretion of mold from deca vegetal matter have amounted to more than two feet? It is at all likely that a forest has grown over this village site for hundred or even for two hundred years. The recurrence of fires, such as have swept the timbered tracts even within the per since white men first settled in the country adjacent to the Misso river, has been noted by explorers and travelers, and it see reasonable that the two feet of earth, or a part of that amou covering the house ruins has been carried there by the winds

ages. In substantiation of this theory it is necessary only to state that there are some able geologists who are of the belief, based on extended research, that the entire loess deposit of one hundred and sixty feet or more is nothing more than "wind-blown sand" or deposit from dust storms. A leader in this opinion is Professor Bohemil Shimek of the University of Iowa, who has devoted years to a study of the loess formation in many different states and who recently read a paper on this subject before the Iowa Anthropological Association. Some geologists say that under the conditions in which I have found these house circles it would require a century for one inch of earth to accumulate. If this theory be correct, then these dwellings were occupied as such two thousand years ago. Travelers declare that the thickest earth-lodge walls were of not more than eighteen inches.

In concluding I would call the attention of archeologists to the report on *The Mandans* by G. F. Will and H. J. Spinden, published by the Peabody Museum, Harvard University, in August, 1906, and ask them to draw such conclusions as they may respecting the people who occupied the "buffalo wallows" of Douglas county, Nebraska.

OMAHA, NEBRASKA.

THE UNITY OF SPEECH AMONG THE NORTH AND THE SOUTHERN DÉNÉ

By A. G. MORICE

The merest tyro in linguistic differentiations can tell glance a Polynesian dialect from any representative of the Sla or Germanic group of languages. The remarkable preponde of vowel over consonant sounds in the former is as great a reverse is in the latter. These are, however, nothing but mater outward differences that do not affect the soul of a language. the philologist is concerned with above all is its morpholog process of word building, the rules that govern the relations component parts, and the particular alterations that may spri as it splits into dialects.

Taking as an instance the Déné languages of North Amer close study of their characteristics will reveal the fact that the at the same time monosyllabic and polysynthetic, agglutinativ inflective, much as these properties seem to be mutually self-ex ing. I have more or less adverted on these points in previous ings.[1] My purpose in the present paper is not to enlarge thereo prefer to call the reader's attention to a particularity which, co ering the vast extent of the area occupied by the Déné family the great isolation of several of its branches, I consider nothing of wonderful: I mean the practical identity, the morphologica grammatical unity of all its dialects.

From the arid wastes of Arizona and even the sunny plai Mexico to the frozen deserts that confine the haunts of the Esk the same roots, sometimes with unimportant variations, quite without an iota of difference, are used by members of tribes rated by a distance of more than two thousand miles, where aborig alien in blood and language have ranged for unknown centu The same delicate and highly significant sounds occur in the dia

[1] See especially The Déné Languages, *Transactions of the Canadian Ins* vol. 1, Toronto, 1889.

of the former, whose terminology moreover is formed according to an identical process and whose grammar is remarkable for the similarity of its rules.

But to fully appreciate this radical homogeneity the student must become imbued with the fact that, though the consonants contain the quintessence of the Déné idioms, to the exclusion of the vowels, which vary as a matter of course from tribe to tribe, there are some among the former that are interchangeable throughout the entire family to the extent of being utterly undifferentiated by the natives, while others are invariable within the dialect they characterize but may change according to the various tribes.

To the first class belong the correlated sonant and surd *b* and *p*, *d* and *t*, *g* and *k*, as well as the exploded *t'ł* and *k'ł*. Thus the Déné ear can detect absolutely no difference between, for instance, *bés*, knife, and *pés; déné* man, and *téné; go*, worm, and *ko; t'ła*, posterior, and *k'ła*. Question any Déné on the difference in the meaning of, say, the words *debe*, mountain sheep, and *tepe*, and he will assert that you are uttering exactly the same sound in both instances.

To the second class belong the consonants, single or double, such as *p* (or *b*) and *m* (or *v* in the far north); *c* (*sh*) and *fw; 't* and *'q; ts* and *tc*, *kw* or *kfw; t's* and *'kw*, sometimes *t'q* or simply *'t*.[1] While these remain invariable within a given tribe, they are mutually convertible from dialect to dialect, to the extent of becoming safe gauges in determining the sept or band to which the speaker belongs. The transmutability of these particular consonants is noticeable especially in the north. A few examples will illustrate my meaning:

lake	*pîñ*	(Chilcotin)	*mœn*	(Sékanais)	*vœn*	(Loucheux)
snare	*pił*	"	*mił*	"	*via*	"
his, her	*pœ-*	"	*mœ-*	"	*vœ-*	"
leggings	*cœł*	(Chippewayan)	*fwé*	(Hare)		
long time	*ca*	"	*fwa*	"		
vainly	*cun*	"	*fwin*	"		

[1] In these and all aboriginal words quoted throughout this paper the apostrophe (') represents the click; an inverted period (·) stands for the hiatus; *q* (except in Navaho terms reproduced from the writings of Navaho scholars, who assign to it the value of a strong aspiration) is identical with *cu* in the English *cure; ł* is a peculiar sibilant *l; œ* is the *e* of the French *je*, *te*, etc.; *ś* and *ź* are intermediary between *s* and *c* and *z* and *j* respectively.

vein	*æ'tûż*	(Carrier)	*et'qûże*	(Hare)
inhabitant	*-hwo'ten*	"	*hwot'qen*	(Sékanais)
stone	*tsé*	"	*kfwé*	(Hare)
meat	*ætsæn*	"	*ekfwen*	"
bone	*t'sæn*	"	*e'kwené*	"
sinews	*t'sé*	"	*'kwé*	"
breasts	*t'sû*	"	*'toe*	"

All of these interchanges are common in the north. The letters they affect are therefore co-affin, and in terminological comparisons this fact should never be lost sight of.

The *t* of one tribe will even occasionally become *n* with another; ex.: *ta*, eyes, in Sékanais; *na* for the same in Carrier, Chilcotin, etc. A *kh* may also either appear *krh* to some transcribers, or be really so modified by a strange tribe: Chilcotin *khon*, fire; Chippewayan and Hare *krhon*. But in no case that I know of will a *th* (= *t* + *h*) be converted into a common *t*, or a *kh* (= *k* + a harsh *h*) into a common *k*, any more than a click can disappear from the word it affects, though its less essential elements may otherwise be altered to suit the requirements of a particular dialect. The reader is likewise requested to bear constantly in mind those fundamental laws of the northern Déné phonology.

But what of the south? What can I know of the Déné of the United States, the Apache and the Navaho, the Hupa and the other remnants of tribes on the Pacific coast, with whom I am not personally acquainted? How could I speak of their idioms without inviting the charge of presumption? This objection, which is but natural and may seem unanswerable to an outsider, was forcibly brought to my notice by the remark of a reviewer animadverting on criticisms of my own concerning a work which deals with one of those southern dialects. Dr A. F. Chamberlain, in a review of the Déné languages published in the *Année linguistique* of Paris, says: "Father Morice's strictures on Mr Goddard's work seem to the reviewer too dogmatic, since the critic is not himself an expert in Hupa which Mr Goddard has studied *in loco*." [1]

While I cannot by any means consider myself warranted in drawing the line between what is an excess and what is a defect of dog-

[1] *American Anthropologist*, vol. IX, no. 2, p. 400.

matism, especially when my own judgment is at stake, I cannot help thinking that had my worthy friend been aware of the wonderful uniformity in essentials of the Déné languages which it is the object of this paper to bring into relief, he would have hesitated to make this criticism. It would be much more agreeable to let it pass unchallenged; but then Philology would be the loser to the extent of its remaining unacquainted with a fact which I consider well worth a few moments' consideration.

We are confronted here, not with a question of personal right or wrong — which may well be overlooked — but with the fact that a patient investigation of some nine or ten Déné dialects during the last thirty years or so has impressed on my mind the wonderful similarity in morphology throughout that linguistic family, which I fancy entitles one who has acquired a speaking knowledge of several of its idioms to write with some degree of confidence of those he has not actually studied.[1]

When the late Dr Washington Matthews published his invaluable *Mountain Chant*, two things impressed me irresistibly from a philological standpoint: the great similarity of the root words mentioned in his Navaho texts with their equivalents in the north, and the fact that this similarity would have become a perfect identity but

[1] Dr Goddard says in a late paper that "the people occupying the southern portion of the territory which lies west of the Rocky mountains have received the attention of Morice who has published extended accounts of them" (Assimilation to Environment as Illustrated by Athapaskan Peoples, in *Congrès International des Américanistes*, vol. I, Québec, 1907). As the appositeness of my contentions such as embodied in this paper depends considerably on the extent of my Déné studies, I may be permitted to remark that the area covered by the natives of whom I have personal knowledge is much more extensive than this author seems to suspect. I have lived among the Déné who range between Teslin lake in the Yukon and the Lillooet mountains, that is between 51° and 61° N. lat., and have collected extensive dictionaries or briefer vocabularies not only of the Chilcotin, Carrier, Sékanais, and Babine idioms, but even of the Nahanais of the far north. Of the latter I have a grammar which I printed myself, and a vocabulary partly in print, without counting a number of texts still in manuscript. Moreover, five years ago I published in *Transactions of the Canadian Institute*, The Nah·ane and their Language. Now, the Nahanais can hardly be said to occupy "the southern portion of the territory which lies west of the Rocky mountains." Finally, I have had personal intercourse with Déné from the eastern side of that range, the Beavers, the Sarcee, and even representatives of the Mackenzie tribes. In each case their language has been the chief object of my investigations. Simple justice to the subject of these pages has brought forth these statements.

for the lack of a few delicate though none the less important soun common to all the other Déné idioms with which I am familia Being by experience aware that these usually escape the notice the uninitiated, I surmised, somewhat hesitatingly, that the tra scriber must have overlooked them. To arrive at the truth in th important matter, I wrote the following in a tentative way more th sixteen years ago: "Shall I confess in this connection that the irreg larity of some radical and, in *all* the other dialects, unchangeal consonants entering into the composition of those words would le me to suspect that such delicate, but very important, sounds as *'k*, *t*, may possibly have escaped the notice of the compiler? Thc and many other terms in the said Mountain Chant are, in otl respects so similar to synonyms from the Northern Déné dialects to hardly leave me any other way of explaining away the discrepa cies between, for instance, the Navajo roots Nos. 3, 76, 84, 185 a 327,[1] and their equivalents in the other dialects."[2]

At that time, at least, I was not "too dogmatic," for I imn diately added: "If I am mistaken in my assumption, these alte tions of essential consonant sounds afford the comparative philolog data well worth some moments of study."

In the work cited Matthews had written with a common *l* su words as *dsil*, mountain; *litsòi*, yellow; *łakài*, white, etc.; withc click, the terms for now, *'kat;* arrow, *'ka;* on, *'ki;* cloud, *'k* etc.; without the harsh guttural, those for fire, *khon;* for you man, *tsilkhe;* and without the guttural, or any sign for the lingu explosion, the term for woman, which, in the north, requires bc (*t'cikhe*).

The *Mountain Chant* was published in 1887, and a marked co of my strictures on the rendering of the aboriginal words in it w sent to the author as soon as published. Exactly ten years after t appearance of the former, Matthews' *Navaho Legends* was issuc in which, though disclaiming any pretensions at too scientific transcription of the texts or occasional native words therein,[3] "th compiler introduced the sibilant *l* (*ł*) against the absence of whi

[1] These numbers refer to groups of radical words in my vocabulary of Déné roots.
[2] Déné Roots, *Trans. Can. Inst.*, vol. III, p. 152.
[3] *Memoirs American Folk-lore Society*, vol. V, p. 54.

I had protested, though he still neglected the no less important click and the characteristic *th*.

In his beautiful *Night Chant*, published in 1902,[1] Dr Matthews went a step farther, and occasionally noted this double consonant in terms which likewise contain it in the north, such as *tha-*, water (in composition); *yitha*, among, and derivatives; while he scrupulously reproduced all the *ł* sounds.

Was not this an implicit admission that I was right in my remarks, even though I had never studied Navaho on the spot?

But there now comes a recent and conscientious student of that dialect in the person of the Rev. Fr. Leopold, O.F.M., who admits unbidden, nay probably unaware of my comments on Matthews' first writings, the all-important clicks and *th* (which he writes *tq*) in the first chapter of a Navaho grammar which I now have before me. And it should not be forgotten that this gentleman, who has already written much on the Navaho, is studying their language *in loco* and with a view of acquiring a perfect speaking knowledge of it.

Nor is this all. In 1887 the late Dr G. M. Dawson, Director of the Geological Survey of Canada, published an essay on the western Nahanais,[2] followed by a vocabulary of their dialect which he kindly sent me for emendation and correction, if any should prove necessary. Dr Chamberlain will please remember that at that time I had not had anything to do with the Nahanais. Yet my acquaintance, not only with other dialects, but with the morphology and the phonology of the whole family — with those linguistic traits which I had so far found to pervade all its branches east and west — emboldened me to point out many inaccuracies which were embodied in an appendix to a paper in the *Transactions of the Canadian Institute*.[3]

By referring thereto, the reader will perceive that my strictures bear on precisely the same stumbling-blocks as those I have already mentioned in connection with the Navaho dialect. But when afterward I made a special trip to the home of those Indians, I found that not one of my criticisms of Dawson's vocabulary was amiss. Is

[1] *Memoirs of the American Museum of Natural History*, vol. VI.

[2] *Report on an Exploration in the Yukon District*, Montreal, 1888.

[3] The Use and Abuse of Philology, *Trans. Can. Inst.*, vol. VI.

not that enough to impress one with the fact that the characteri of the Déné languages are essentially the same north and south, that when the contrary would seem to be the case with a partic dialect expounded by a new scholar, the fault for the appa disparity lies with the latter, not the former?

At the Congress of Americanists held last year at Queb learned member of the same, who has studied racial differentia more from the physical standpoint than through the intellectua of the people such as is evidenced by their languages, seemed prised at my assurance in speaking of the Navaho as Déné, v those aborigines are, he said, physiologically so different from Apache. No doubt they are now a more or less mixed people even though there seem to be among them at least two very tinct types of physique, one of these appears to me unmistak Déné. Moreover, I have the photographs of many Navah whom I am ever tempted to give names familiar to me, as features recall so vividly those of several of my Carriers and (cotin friends. To facilitate comparison, even with very limited n rial, let my honored friend — who, I hope, will read these lin only glance at the picture of Mariano in Matthews' *Navaho Leg* and that of the Carrier fisherman in my own *History of the Nort Interior of British Columbia*. The age of the two individuals is dently not the same; yet were there ever two brothers who closer resemblance?

But we must not forget that in America language is the s guide to racial differentiation. The following list of root wo whose elements are extracted, not from a dictionary or ev vocabulary, but from very short texts and casual references in works of Matthews and Fr Leopold, ought to satisfy the most acting scholar, not only as to the racial identity of the Navaho the Déné of the north, but even as to the racial unity of the dia spoken by both branches of this great linguistic family. So fa I know, the speech of the Apache differs but little from that of Navaho.

NAVAHO	NORTHERN DÉNÉ
łǫ, fish	*łǫ* (Carrier)
łit, smoke	*łét*
łiñ, horse	*łiñ*, dog[1]
ke (?) feet	*khé*
yā, louse	*yā*
ya, sky	*ya*
yé·, son (of father)	*yé·*
t'łǫ, grass	*t'łǫ*
t'łoł, rope	*t'łoł*
tsė, stone	*tsė*
il, leaf (of a conifer)	*·æl*[2]
ad, wife	*·at*[2]
-na, eyes	*-na*
-ze, mouth	*-zé*
-bit, belly	*-bœt*
-tsi', flesh	*-tsi* (Babine)
-'tan, leaf (deciduous tree)	*-'tan*
-'do, nest	*-'to*
-dagha, beard (lit. lip-hair)	*-tara* (do.)
dine, man, people	*dėné*, *diné*
debe, sheep	*tepe* (mountain sheep)
thaba, shore (lit. water-edge)	*thapa* (do.)
æłthiñ, bow	*æłthæñ* (old Carrier, now *æłthi·*)
at'ła, bottom	*æt'ła*
tha, three (things)	*tha* (do.)
diñ, four	*tiñ* (Chilcotin)
łanj, many (pers.)	*łane* (Carrier)
'ka, arrow	*'kra*[3]
kai (?), husband	*khe* (do.)
'kos, cloud	*'kwos*
dził, mountain	*dzæł*
thin, road	*thèn* (Chilcotin)
del, crane	*tel*
peł, drowsiness	*peł*, *pæł*
ni', earth	*nèn* (Chilcotin); in compos. *ni-*
ni, mind	*ni*
łakan, sweet (to taste)	*łækre*[3] Carrier)
nił, with thee	*neł* (Chilcotin)
bił, *yił*, with him	*beł*, *yeł*
yi', in	*yo*, it
be, with (instrument)	*be*
'kat, now	*'kai* (Babine)
-tyel and *nthel*, broad	*-thel* and *nthel*
nez'kaz, cold	*nez'kaz*
nizá, far off	*neza*
yuta, above	*yuto*
yuya, below	*yuyo*

[1] The horse having replaced the dog in Navaho economics, the former has usurped the name of the latter, which is nowadays nothing more than *ñ-tsan*, 'horse excrement,' to the proud southerners.

[2] The hiatus indicated by the dot may have escaped the notice of Matthews. This can be ascertained by prefixing to those words a possessive pronoun. For instance, "his wife" should be *ṗ-at* in Carrier, were it not for the initial hiatus that gives a separate form to the pronominal prefix, *pæ-·at*.

[3] The *r* in such words is hardly perceptible even in the north, and will be discerned only after years of study.

NAVAHO	NORTHERN DÉNÉ	NAVAHO	NORTHERN D
e la, this (is)	*e la*	*neslin*, I am	*neslin*
yina-, round it	*yena-*	*niliñ*, it flows	*ninliñ*
yika (?), for it (desire)	*yekha* (do.)	*nani'ti*, it stretches across	*nani'ti*
saka (?), it lies (in a receptacle)	*sækha* (do.)	*niya*, he arrived	*ninya*
yikai (?), daylight	*yækhaih*	*biázi*, his little one	*beyaze*

In the above list an interrogation mark (?) follows such of Navaho words as I am inclined to believe should have their gutt sound more emphatic than is indicated in the works of the south transcribers. As to the initial hyphen (-), it represents a prefix *æ*, denotive of generality which disappears in compounds. E *æna*, eyes (of any living being); *sna*, my eyes; *nena*, human ey *mæstzih-na*, owl eyes.

But to get an adequate idea of the remarkable similarity of southern with the northern dialects, one should not lose sight of peculiar system of transmutation, which more than doubles the nu ber of practically homonymous equivalents. Thus, for instance, Navaho *c* (*sh*) is very generally replaced by *s* in the north. Ex.

NAVAHO	NORTHERN DÉNÉ	NAVAHO	NORTHERN DÉ
ci, I	*si*	*d'zin*, bone	*t'sæn*
ca, sun	*sa*	*nitt'ci*, wind	*nitt'si*
cac, black bear	*sas*	*naca*, I walk	*nassa*
cit, with me	*set*	*icla*, I made	*æsla*, *esla*
bec, knife, iron	*bès*	*dicni*, I said	*dîsni*
ca, beaver	*tsa*	*t'łotcin*, wild onion (lit. grass-stinks)	*t'łotsèn* (d
ttcan, dung	*tsan*		
t'ci, towards	*t'se*		

Strange to say, this convertibility works both ways, as the dou consonant *tc* of the northerners is almost invariably replaced by in the south. Ex.:

NAVAHO	NORTHERN DÉNÉ	NAVAHO	NORTHERN DÉN
tso, big (augmentative)	*tco*, (do.)	*atsile*, younger brother	*atcele*
tse, tail	*tcé*	*tsitke*(?), young man	*tcilkhe*, you men
tsin, stick	*tcèn*		
ntsâ, big (adj.)	*ntcâ* (do.)		

On the other hand, the *tz* or *dz* of the north is occasionally converted into *tc* in the south. Thus, the Navaho say *tcin* when the northerners have *tsîn* (day); *tca* (ears) for *tza*, etc.; while the *z* of the northern tribes is almost without exception transformed into *j* in the south. Ex.:

NAVAHO	NORTHERN DÉNÉ	NAVAHO	NORTHERN DÉNÉ
tcij, firewood	*tséz*	*bi-ji*, his corpse	*be-zi*
yaj, young (of parent)	*yaz*	*nijo*, beautiful	*nezun*

Another form of transmutation that adds to the number of terms identical in both divisions of the family is the commutability of *g* and *y*. In the north we say *téyèn*, shaman; *bé-yèn* his or her song, while the Navaho and the Apache have it respectively *dhigin*[1] and *bi-gin*.

If we add to the above such words as the Navaho *ko* (?), fire; *kin* (?), house (northern Déné *khon* and *khoñ*), we shall obtain a uniformity of speech that will, I fancy, entitle one who has thoroughly familiarized himself with the make-up of the dialects of one division to speak with some degree of confidence of those of the other.

This uniformity was, down to a comparatively recent date, even more striking. For instance, the Carriers of the north say for six, *t'kœ-tha*, 'on both [hands] it is three,' and for eight, *t'kœ-tœñge*, — *tœñge* is *tîñ* in Chilcotin — that is, 'on both [hands] it is four.' Now, let us listen to one of my southern correspondents: "I have," writes Fr Leopold, "repeatedly taken your Déné roots and compared them with the root words of their own [Navaho] language, which caused many an exclamation of surprise, and much smiling and commenting. One day, I went through the numerals with some old men. In modern Navaho six and eight are *hatqâ* (*hathâ*) and *tsebi*. When I read out your words for the same figures, an old man smiled, clapped his hands, and said: *aɬ'ke-tqâ*, *aɬ'ke-dî*, adding

[1] Matthews and others translate this word "holy," thereby giving expression to an idea which I dare say is entirely foreign to the mind of the aboriginal Déné. In the north, song and magic are correlative notions, which are expressed by the same word, *cin* or *cèn* — *yin* or *yèn* in compounds. Thus, *dhigin*, whatever may be its real meaning among the modern Navaho, originally stood for "he that is possessed of supernatural or magical powers." The Carriers still have a verb which vividly recalls that meaning: *tœcyèn*, 'I am a singer' (i. e. possessed by magic); *ɬnyèn* (2d pers.); *tœyèn* = *dhigin*.

that that was the way the old Navajos used to pronounce those figures."[1]

I am well aware that the *corpus delicti* in my case is interference with the studies of a Hupa, not a Navaho, scholar. What precedes must, however, stand at least as some sort of preparatory argument, showing without the possibility of cavil the remarkable uniformity of the Déné phonetics and morphology under various climes. It must also point out the chief difficulties that have so far proved stumbling blocks to the majority of new students, north and south. Is it probable that rules which govern the speech of all the other tribes, however distant they may be one from another, should be set at naught just by one branch of the family, which is nearer to the cradle of the race, and that those delicate sounds and morphological intricacies that were pointed out by such a philologist as Dr Franz Boas[2] should suddenly disappear in one particular case? Of course, this is possible, but I hardly think it likely.

Yet I may as well confess that the Hupa dialect, as rendered by Dr Goddard, differs more from the northern idioms than does either Navaho or Apache. The tribe, being much less powerful, has apparently yielded with more readiness to the influence of environment.[3] Nevertheless, it is unmistakably Déné in its language, and as such I fail to see how it could have done away with those essential characteristics, the lingual explosions or clicks, the *th* (= *t* + *h*) and the *kh*, which we find everywhere. Nor can it have entirely discarded those grammatical and morphological peculiarities which are distinctive of the linguistic stock throughout. That it has not the sequence will amply prove. To commence with the terminological affinities, I present a list of words extracted from Dr Goddard's own texts[4] with their equivalents in the north.

[1] Letter of January 24, 1906.

[2] Tenth Report on the Northwestern Tribes of Canada, in *Rep. Brit. A. A. S.* In the Twelfth Report Dr Boas has himself a short Chilcotin vocabulary which contains the same inaccuracies that I have found in the works of all transient students of the Déné languages.

[3] Powers' contention that the Hupa compel all their tributaries to speak Hupa in their communications with them is now admitted to have been devoid of foundation.

[4] Hupa Texts, *Univ. of California Pub., Am. Archæol. and Ethnol.*, vol. 1, pt. 2, 1904.

HUPA	NORTHERN DÉNÉ
a (?), cloud	*·a*
es (?), sort of fish trap	*·æs*
at (?), wife	*·at*
ɬiñ, dog	*ɬiñ*
ɬit, smoke	*ɬét*
-la, hands	*-la*
-na, eyes	*-na*
-niñ, face	*-nin*
tsé, stone,	*tsé*
ya, louse	*yā*
mæñk, lake	*mæn*
rhay, winter	*rhei*
rhaiɬ, burden	*rhéɬ*
t'ɬo, grass	*t'ɬo*
kos, bulb	*kus*, species of bulbous plant
ɬôn, mouse	*tlûn* (Chilcotin)
khon, fire	*khon*
-khæn, husband	*-khæn* (Chilcotin)
tse, daughter	*tsé·*
détc, younger sister	*tits* (Babine)
qo, worm	*go*
-'tæn, leaf	*-'tan*
-mit, belly	*-mét*, *-pæt*
sats, black bear	*sas*
dje, pitch	*dzé*
djo, now	*djugu* (Loucheux)
nin, earth	*nèn*
tseɬ-kai, white stone	*tsé-lkrai*
nin, thou	*nin*
non, we	*nrôn* (Chilcotin)
ɬa, one	*iɬc*
nak, two (things)	*nèkh* (Babine, do.)
nanin, two (pers.)	*nane*, *nanæn* (do.) etc.
nadin, twice	*nadæn*
ɬan, many	*ɬan* (Chilcotin)
mela, some	*mællærh*
mi-nin, its month; season [1]	*mæ-næn*
me, in	*me*
yo, that	*nyu*
yîdæk, above	*yedæk*
yînæk, south [2]	*yenæk*, upstream
yîda, east	*yeda*, downstream
yitsin, down	*yetsæn* (do. in the direction of water)
na-, again, (in composition)	*na-* (do.)
-naɬ, in presence of	*-naɬ*
-a, for; ex.: *na*, for thee	*-a*; *na*
ma, *ya*, for him	*ma*, *ya*
saa, a long time	*sa·*
nisa, far off	*neza*
edin, without	*·edin*
ɬitso, blue [3]	*tæltso*, yellow
a'ten, he did	*i'ten*
neiɬin (?), I see	*niɬ·in*

[1] In a footnote Dr Goddard gives the phrase 'its face' as the literal rendering of this compound, apparently unaware of the fact that in Déné *nin* (in the north, *nan*, *næn* or *nèn*, not *nin*, face) means 'season,' 'month,' as affecting the appearance of the ground. See Petitot's Dictionary at *Saison*, *Mois*.

[2] This and all other similar words are given no very fixed meaning in Goddard's *Texts*. In the north they refer strictly to bodies of water, though they are occasionally, yet improperly, used to designate the points of the compass.

[3] Blue, green, and yellow are not clearly differentiated among the Déné. Interrogation marks express doubt as to the correctness of the spelling.

HUPA	NORTHERN DÉNÉ
nadił, they walk	*nœtił*
silliñ, become	*selleñ*
saœñ (?) lying[1]	*sa·añ*
nîndas, thou art heavy	*nîntaz*
nadaa (?) standing (speaking of tree)	*naḏîn·a*
nillin, it flows	*nînlin*
yeiyoł, he blew	*yeinyul*
yiskhan, daylight	*yœkhaih*
tceneiyai, he went out	*tceninya*

If there is in the Déné or in other American languages a set of terms that is of paramount importance, it is that of the verbs, and in the structure of the verbs nothing can compare from a philological standpoint with that radical part which contains in itself the very essence of the word. These verbal roots form generally the last syllable of the term, and nothing can so well bring home to the reader the perfect similarity of the Hupa with the northern Déné dialects as the following list of radical desinences which are identical in the north and in the south, save for the unimportant (northern) variations occasionally noted within parentheses:

-ai, *-a* (*-·ai*, *-·a*), position of single objects	*-men*, fulness
-kha, position in a receptacle	*-yôł*, blowing with the breath
-da, station, sitting	*-kha* (*khaih*), dawning
-yen, standing on one's feet	*-khet*, buying
-ya, *-yai*, locomotion on two feet	*-khœt*, questioning
-lat, floating	*-len*, becoming
-me (= *pi*), natation	*-'tas*, gashing
-mas, rotation	*-lal*, dreaming
-na, motion in general	*-git* (*qet*), fear
-ał (*·ał*), manducation	*-los*, sleighing
-nan, drinking	*-tsas*, whipping
-litc (*lets*, *lœtz*), urinating	*-tsit*, pounding
-'tau (*'to*), flying	*-sel* (*sœl*), relation to heat
-łat, springing, dashing	*-sit* (and *-zit*), awakening
-kai (*kre*), poorness in flesh	*-dits* (*-tœts*, *-tœz*), twisting
	-'ten, action in general, etc.

In the face of this wonderful similarity, nay perfect identity, the evidence of which is faithfully recorded when the sounds are clear

[1] Not 'standing' as Goddard has it, p. 110. On the following page he gives it as the equivalent of 'lying there.'

and easy of detection, can it be said that there is nothing abnormal in the omission of the clicks or of the aspiration in the sounds *th* and *kh*, which enter into the composition of the following words?

HUPA (?)	NORTHERN DÉNÉ	HUPA (?)	NORTHERN DÉNÉ
tsin, bone	*t'sœn*	*-tis*, over	*-thœs*
-tcin, toward it	*-t'se*, *-t'sœn*	*-tœk*, between	*-thœk*
tsa, dish, basket	*t'sai*	*tits*, cane	*thœts*, *thœz*
-tsôts, kissing	*-t'sus*	*tin*, trail	*thèn*
-tsit, falling	*-t'sit*	*tak*, three (things)	*tha*, *thakhe* (do.)
tcin-niñyai, he arrived (at a body of water)	*t'sé-ninya*	*tak kœn*, three (pers.)	*thanœn* (do.)
-kai, after	*-'ke*	*-tel*, broad	*-thel*
-kœt, on	*-'kœt*	*-taɬ*, kicking	*-thaɬ*
kœt, now	*'kai*	*-tœk*, counting	*-tho*, *-thœk*
lœk-kau, fat	*tœ-'ka*	*setin*, I lay down	*sethi*
-do, slashing,	*-'to*	*tsiɬtiñ*, bow	*œɬthi*
to, water	*tho*	*-kai*, navigation	*khe*
-ta, father	*-tha*	*-kyas*, sudden break	*-'qas*
-ta, among	*-tha*, *-thœrh*	etc., etc.	

Goddard has three or four of the words which are affected by the lingual explosion rendered by an italic *t*, when that is the letter on which it falls. He also spells with a special letter (*x*) many of those which in the north are noticeable for the reinforced guttural sound *kh*. As to the *th* (= *t* + *h*), neither his volume of texts nor his valuable study on the morphology of the Hupa contains one or any equivalent transcription. Considering that the second element of that double consonant (*h*) is hardly perceptible to an English-speaking student, who may himself add unaware some sort of aspiration between his *t*'s and the following vowel,[1] it may be objected that the difference between that double consonant and the common *t* is too trifling to be taken into consideration. The following terms, taken respectively from the speech of the same tribe, ought to undeceive such easy-going linguists.

[1] Most Carriers, for instance, perceive such an aspiration in the word "town," which they pronounce "thown" in imitation, they think, of the strangers among them.

œta, lips	*œtha*, father	*œ'ta*, feather
to, above	*tho*, water	*-'to*, nest
tœrh, high up	*-thœrh*, among	*'tœrh*, pocket
tèrh, edge (of a high place)	*thèrh*, bottom (of the water)	*'tèrh*, raw
tœk ! well, now !	*-thœk*, break	*-'tœk*, suction, smoking
utė, its horns	*uthė*, he shall lie down	*u'tė*, he shall possess
ninti, incandescent	*ninthi*, thou liest down	*nin'ti*, thou pullest

ti ? what?	*thi*, road
tel, crane	*thel*, berry basket
tœz, driftwood	*thœz*, cane
tai, famine	*-thai*, father-in-law
tœs, from above	*thœs*, blunt-headed arrow
tœpe, mountain sheep	*thœpe*, much, very
tila, that which	*thila*, perhaps

Compare also : *œtœs'ten*, I work for myself, and *œthœs'ten*, I star working for the first time, and such other Carrier phrases as *titœ thî'tœt*, himself shall smoke, and *tœt'sœrh thœt'sœrh*, his own hat i liable to be shot off, wherein the difference of meaning is due en tirely to the presence of the *h* sound after the *t*.

I have a similar list at hand to demonstrate the necessity o distinguishing between *k* and *kh*. I hope the reader will not nee it to become convinced of that important difference. I also deem i unnecessary to add to the above a list of the incomparable *quid pr quos* which may result from the overlooking of the click or lingua explosion, as I published one, not long ago, in *Anthropos*.[1] More over, its effect on the sense of a word has just been noted in th first half of the preceding list.

If it is for having called attention to the absence of these all-im portant distinctions that I am now accused of having been too dog matic, I am afraid I cannot plead repentance to obtain the pardon o my fault, especially as, instead of pronouncing boldly on the merit of the case, I merely asked, " Would it be presumption to suppose

[1] Vol. II, pp. 198–99.

that there is here an error of hearing or of transcribing?"[1] If these have really disappeared from the speech of the Hupa, I consider that we are face to face with a most remarkable, and I would fain add, unprecedented linguistic phenomenon.

I repeat that, so far as I know, the Déné *th* will occasionally change with the tribe of the speaker, becoming, for instance, *tc* among the Sékanais (Carrier *thû-thî*, big water; Sékanais *tcû-tcî*), or *trh* and *tq* — practically the same as *th*, though perhaps more emphatic — among the eastern Déné and the Navaho respectively. I am told that it even degenerates into a *k* among the Lipan;[2] but as to becoming converted into a common *t*, I know of no such case.

As usual, a particular system of consonantal commutability adds not a little to the similarity between Hupa and any of the northern dialects. That system, however, is in keeping with the greater individuality of the former, and while it admits, for instance, of the transformation of the *p* into *m* common to most cognate idioms, it affects also letters which nowhere else undergo any such changes.

[1] "Les Langues dénées," in *L'Année linguistique*, vol. II, p. 238. In my review of Goddard's *Texts*, I thought I had treated their transcriber with more leniency than my own confrères Frs. Petitot and Legoff, and had scarcely conformed, in connection with his effort, to the outspokenness, nay blunt severity, which characterizes the publication for which I was writing (see, for instance, the article on the Basque Languages in vol. I of the same), and which was implicitly asked of me. The only unqualified criticism I made of the *Hupa Texts* is the following: "Certaines erreurs évidentes se sont aussi glissées dans son travail, et c'est merveille, en vérité, que ses 272 pages de textes et de traductions n'en contiennent pas davantage. Ainsi page 315, ligne 8, *hwin-nis-te* veut dire 'mon corps' et non pas 'ma médecine'; page 254, ligne 17, *nit* devrait être traduit 'avec toi,' au lieu de 'pour vous.'" Truth bids me repeat these assertions; will Dr Goddard deny that they are founded on fact? On the other hand, I would be extremely sorry if any words of mine should in the least detract from the real worth of that gentleman's studies, to which I have repeatedly testified in the incriminated review itself. Yet, there may be some who will be tempted to distinguish between the researches of a student who goes to a tribe of Indians to acquire a theoretical knowledge of their most intricate language and those of a man who, for a quarter of a century, has lived with several cognate tribes so as to become one of them, to speak nothing but their dialects, to think as they do and through the same medium; of a man who came to publish several volumes for their own use in a system of writing which made phonetical and grammatical errors an impossibility. Bearing in mind the marvelous similarity of those idioms in the north and in the south, anybody placed in such a position, even though blessed with very common linguistic aptitudes, should, it seems to me, be able to know something even of those he cannot speak himself.

[2] Letter from Dr Goddard, January 25, 1907.

In the first place, the sibilant sounds *s* (or even *z*) and *c* (*sh*) a converted into *hw* or *uw* by the Hupa, and the Hupa alone. Ex.

NORTHERN DÉNÉ	HUPA	NORTHERN DÉNÉ	HUPA
si, I	*hwe*	*sœ-ello*, my salmon	*hwi-ll*
sa, sun	*hwa*	*ṗ-uzi*, his name	*hô-hw*
seł, with me	*hwił*	*nauspé*, let me swim across	*nauwn*
cin, song	*hwin*	*-yaz*, sign of diminutive	*-yauu*
za, only	*hwane*	*-'tés*, coal	*-'teu*

Then we have the *ts* of the northerners, the *tc* of the Navah transformed by the Hupa into the unwieldy *tcw*. Ex.:

NORTHERN DÉNÉ	HUPA	NORTHERN DÉNÉ	HUP
tsû, grandmother	*tcwo*	*tsæz*, firewood	*tcwitc*
tso, crying	*tcwû*	*t'sal*, toad	*tcwal* (?
tsan, excrement	*tcwen*		

On the other hand, the *tc* of the north and *ts* of the south ofte become *k* among the Hupa. Ex.:

NORTHERN DÉNÉ	HUPA	NORTHERN DÉNÉ	HUPA
-tcé, tail	*-ke*	*tcu*, also	*kœñ*
tcin, stick	*kiñ*	*tcél*, younger brother	*-kil*

Lastly, the Hupa likewise change *r* into *w*. Ex.:

NORTHERN DÉNÉ	HUPA	NORTHERN DÉNÉ	HUPA
sœræn, from me	*hwô-wœñ*	*unîkran*, like	*newan*
sœræntan, my son-in-law	*hwo-wœndan*	*yœzitre*, he killed him	*yissitwe*
itœræn, one (pers.)	*tuwœñ* (do.)	*œdœtræs*, he bores a hole	*yekitwis*
rœłta·, yesterday	*wiłdœñ*	*na·dœdikrat*, he shook himself	*anaidûwiñw*

If now, passing from the phonetics and the chief radicals w come to the material structure and even the grammatical rules of th Hupa dialect, we will find that both conform wonderfully to thos of the north. It is the same system of word formation, even in it very particularities. Thus, to give an instance, the notion of aid i rendered by *hwillau-*, *nillau-* (which bear a close resemblance t 'my hand,' 'thy hand,' etc.), followed by the verb determining th

kind of help rendered. Among the Carriers, these prefixes are the same (taking into account the transmutability of the consonants), *sla-*, *nla-*, etc. The compounding of monosyllables is identical north and south, even with regard to given words. The Carriers say for tears *-na-tsœl-thû·*, 'eyes-posterior-water'; the Hupa have it *-na-kœt-to* [*tho*]. To express the act of getting married, the former say of a man *a-'ti* (contraction of *·at-œ'ti*, a wife he has). The Hupa similarly say *œt-'ten*.

In Hupa, as well as in Carrier and in Sékanais, the few plurals that exist for the terms of relationship are in *-khai;* the possessive case changes the sibilant *l* (*ł*) into a common *l*, and adds a desinential *-e;* the possessive pronouns are formed according to the same principle of prefixing to the noun the initial consonant proper to each personal pronoun; our relative pronouns are replaced by a monosyllable preceding the verb, as in the eastern Déné, etc.

But we need not pursue further our parallelism. The Hupa dialect, though encumbered by many foreign words, is essentially Déné. All the other Déné languages, without exception, are remarkably similar in their phonetics and morphology. Under the circumstances that prompted these pages, I leave it to the reader to draw the natural conclusion.

KAMLOOPS,
BRITISH COLUMBIA.

AN ANCIENT PERUVIAN EFFIGY VASE EXHIBITI DISEASE OF THE FOOT

By ALBERT S. ASHMEAD

The accompanying reproduction, from a photograph, of a sp men of Peruvian pottery, represents without doubt a diseased c dition of the sole of the foot as well as of the upper lip. In for writings on Peruvian earthenware vessels I have claimed that amputation of the feet represented on so many of them was due a disease typified on the faces of many of the images by loss of upper lip and the nose — an eating disease to whose attacks feet also were doubtless susceptible. In all the images I have h the opportunity of studying, I have found always amputation of b feet. In each of two cases, one foot had been cut off, while condition of the other could not be ascertained as the man w represented as sitting on it. Dr R. Lehmann-Nitsche, of La Pl Museum, La Plata, Argentina, has published an account of c image (not beyond question) representing only one foot as amp tated, the other foot being marked in outline, not modeled, on t surface of the clay.

I have always defined the disease represented on these vess as *uta* (skin-tuberculosis), or as uta and syphilis combined ; certai uta (wolf-cancer) was the precolumbian disease most likely to depicted in the facial mutilations of the human image. In t specimen which, through the courtesy of the American Muse of Natural History, I am permitted to illustrate, are represent multiple ulcerous perforations of the sole of the foot — the eff of uta and of nothing else. Syphilis would not cause such a pa ological effect, while the perforation of the sole by leprosy wo be unique. In the present specimen mutilation of the nose and t upper lip is also represented, although more crudely than usu It is probable, then, that the disease which mutilated the face caus the mutilation of the foot also. It is probable, too, that later on the progress of this disease, the cure of which was possible o



PRECOLUMBIAN WATER BOTTLE FROM PACHACAMAC GRAVEYARD, PERU, SHOWING DISEASE OF SOLE AND DISEASED UPPER

by cutting away the diseased portion, as the uta specialists of Peru today assert to be the case, the diseased member was amputated.

That feet were amputated as a punishment for crime, the conclusion of Carrasquilla of Colombia does not seem tenable, for if such were the fact there would be other graphic representations of the effect of such punishment, as cutting off the ears, hands, etc., which members, however, are not found lacking from the pottery.

Mr Charles W. Mead in a letter to the writer expresses the opinion that the cavities in the soles of the feet of images of the kind under consideration represent the pits left after extracting the egg-sacs of the pique, a species of sand flea.[1] I think this opinion is not tenable for the reason that the face of the image also is shown to be diseased and the represented ulcers are too large.

Mr Mead has published a plate from a clay model of ancient Peru showing a dance around wine or water bottles placed on the ground.[2] One of the dancers is represented with a square block for a foot — evidently a substitute for the natural foot which had been amputated. The musical instruments used in the dance are represented as being played. The bottles just referred to, found in old Peruvian burial places, are always represented as connected with the sick — those needing medical relief — and the dying, and with the thirsty. Even the stump of an amputated foot has been shown as having medicine applied from a cup by the owner of the crippled member. The dances above mentioned were then in reality "sick dances." The water bottles around which the participants danced, on the death of a patient were buried as an image of his spirit, representative of his human personality put into the grave with him.

The musical instruments in the hands of so many persons in supplicant (begging) attitude represented in clay on the mummy grave-pots, do not mean in my opinion that these individuals were really beggars owing to their diseases or mutilations, but rather that they were sick persons, applying superstitiously medical care in the way best known by them. They were trying to frighten away, to exorcise, the evil spirit of their diseases. Like their dances, the efforts made were a medical performance or treatment. They sup-

[1] See von Tschudi, *Travels in Peru.*

[2] *American Museum Journal*, vol. III, no. 4, fig. 2, suppl., 1903.

plicated some god perhaps in this superstitious way, praying him tc cure their infirmities. Drums, which are shown in the hands of some of the Peruvian mortuary vessels in human form found in graves, ar never buried with mummies, so far as is known to the writer, onl their representations in the clay of the vessels. The covers of many perhaps of all, of the drums of the ancient Peruvians were mad from the skins of enemies. The drum idea does not seem consonan therefore with the idea of the peaceful journey of the soul of th departed to the after-world.

As already implied, I have never seen represented amputatio of the hands or of one hand. This seems strange, for the hands a well as the feet would naturally have been attacked by the inse carriers of this disease. As clearly as I can explain it, the circum stance of absence from the pottery of human figures lacking one o both hands may be accounted for thus:

The ancient Peruvians believed that the soul took four days t journey from the grave to its future abode. Hence food and espe cially drink in that dry climate were requisite, and these therefor were buried with the corpse, which needed its hands to reach out fc them. If the natural hands were mutilated they would not be s represented on the soul (or clay image) of the departed, but artifici hands would be given him; otherwise he might die of hunger or thir on his trip to the moon. But this is a problematical explanatior I should like to know whether any European anthropologist ha ever found on the mortuary earthenware of Peru evidence of muti lation (amputation) of the hands.

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BOOK REVIEWS

Moundville Revisited. Crystal River Revisited. Mounds of the Lower Chattahoochee and Lower Flint Rivers. Notes on the Ten Thousand Islands, Florida. By CLARENCE B. MOORE. Reprint from the *Journal of the Academy of Natural Sciences of Philadelphia*, Vol. XIII. 4°, iv, 337–476 pp., ill.

This reprint includes an account of Mr Moore's most recent mound researches, and is the sixteenth issue of the series of works treating of his explorations in the Southern states. The first section embraces the results of a second visit to Moundville, Alabama, and contains a large amount of valuable matter. Of particular importance is the apparently conclusive proof of the existence among the ancient occupants of the site of a specific disease affecting the bones which has not heretofore been definitely fixed upon the pre-European population. In all of his explorations in the Moundville district Mr Moore has encountered no single object that can be attributed to the whites or that bears traces of their influence, rendering untenable the view that the specific disease could have become so decidedly prevalent in a native community through contact with the whites without the acquirement by them of articles of European origin.

Reëxploration of the mounds partially excavated during the former visit yielded rather meager results, but the work among the cemeteries and dwelling sites was more productive, and many articles of great interest were unearthed. The designs on the earthenware and on the shell and copper ornaments are especially noteworthy as illustrating the practice of employing mythologic motives in the embellishment of works of art. Prominent among these designs are the cross, — taking in cases the form of the swastika, — the human hand with the open eye in the palm, the man eagle, the winged serpent, and the eye-like device, the significance of which is as yet a matter of controversy. The winged serpent assumes a great variety of forms, extending from realistic delineations down through many degrees of convention to the simple current scroll.

The Crystal River mounds on the west coast of Florida, which had been largely worked out during previous visits, yielded many objects of interest, but, with the exception of a copper ear ornament plated with

meteoric iron, they are not markedly different from those previously described. As with the Moundville explorations, the observations regarding modes of burial and the association of objects of art with the mounds and with the dead are of peculiar value.

On the Chattahoochee and Flint rivers a large number of burial mounds, mostly of small size, were excavated without particularly noteworthy results. Mounds as well as small cemeteries and dwelling sites occasionally yielded objects of European origin, as bits of glass and ornaments of brass, further emphasizing the already well-established fact that mound-building by the tribes continued down to Colonial times.

It is gratifying to know that Mr Moore is still energetically pursuing and promptly reporting his researches, and that still other contributions may be expected to his already remarkable series of monographs. W. H. HOLMES.

Kinship Organizations and Group Marriage in Australia. By NORTHCOTE W. THOMAS, M.A. Cambridge: At the University Press, 1906. (Cambridge Archæological and Ethnological Series.) 8°, 163 pp.

An ethnological desideratum of long standing, a handbook of the social organizations of Australian tribes, has been partially supplied by this little work. Whatever may be the merits of the particular theories supported by Mr Thomas, he has done excellent service in bringing the principal results of the work of a number of investigators into a limited compass and in presenting at a glance with the aid of charts a fairly accurate idea of the distribution of various systems. This cartographical method of presentation deserves to be extended to all branches of anthropological investigation, for there is nothing that so well enables the reader to form an idea of the condition of a certain area at any given time or is so suggestive in the search for origins.

A proper understanding of Australian social systems demands more study than most American anthropologists are able to give to them, yet a knowledge of them is of great importance to anyone who would arrive at a proper appreciation of the position of American systems and quite indispensable to him who attempts an investigation of the social condition of primitive tribes generally. Although differing very greatly in different parts of the continent, certain features always come out as distinctively Australian, at least as compared with systems of North American tribes. One is the almost universal presence of exogamic divisions, another the minute manner in which the marriage of an Australian is lim-

ited to certain phratries, classes, and totems, as well as the existence of the intermarrying classes themselves, an institution suggested nowhere in North America unless in a very rudimentary way.

Mr Thomas appears as an ally of Andrew Lang, and an opponent of the promiscuity and group marriage theories of Morgan, Howitt, and Spencer and Gillen. In taking this stand he is at the disadvantage of attacking the conclusions of the very men on whom the bulk of our information regarding Australian social phenomena rests. Nevertheless the reviewer believes his position on this particular question well taken and considers it supported by all we know of primitive social conditions in North America. Pushed to the limit, he believes the promiscuity-evolutionary theory bound to end in self-contradictions and illogicalities. In order to maintain it its defenders are compelled to fall back on the customs of a few rather peculiar southeastern Australian tribes, and customs in others supposed on no sufficient grounds to be primitive. When this theory is extended to account for the origin of social systems throughout the world the disproportion between the number of tribes presenting "primitive" conditions and all others becomes ridiculously great. Like all other writers on Australian sociology whose writings have come to our notice, Professor Frazer excepted, Mr Thomas falls into what we believe to be an error in assuming that descent was always matrilineal originally and later patrilineal, a position which is hardly tenable for America, at least if we understand that the full-fledged matrilineal clan system is what altered in this manner. For the greater part, however, the positions of the writer appear to be carefully taken, and we believe will stand. But whether this is the case or not, the work has a very positive value as an introduction to the Australian kinship and social systems which are at first so puzzling. J. R. SWANTON.

Kwakiutl Texts—Second Series. By FRANZ BOAS and GEORGE HUNT. Publications of the Jesup North Pacific Expedition, Vol. X, Part I. Leiden and New York, 1906. 4°, 269 pp.

These texts comprise three traditions of the Lekwiltok, four of the Tsawatenok, one of the Guauaenok, two of the Kwakiutl proper, and seventeen episodes of the Mink tradition drawn from various tribes, the English and Indian being arranged in parallel columns. On the strength of this work and of Volume III of the same series the Kwakiutl may now fairly claim a larger amount of native mythology in print than any other North American tribe, Omaha and Ponca together probably standing next.

The publication of native American texts has been fairly rapid in recent years, but there is every evidence that in future a much vaster

amount of material will appear in this form. Myths give the inner thought of a great deal of museum material and ceremonial description, and are therefore quite essential to a proper interpretation of these latter, while there is no way of presenting them so satisfactorily because none is so reliable as that of texts with accompanying translation. It might almost be claimed that with sufficiently ample textual material the whole external life of a tribe could be deduced, and in addition there would be something which no series of objects or description of ceremonies could satisfactorily reproduce, the religious thoughts and feelings of the people and the medium through which those thoughts and feelings were expressed. Therefore, though unattractive, not to say repellent, to the average reader accustomed to garbled and Europeanized fragments of Indian legends from which the Indian spirit has utterly departed, these texts will be turned to again and again not only by the philologist but by the psychologist, folklorist, mythologist, and student of religious phenomena as to an inexhaustible source of reliable information regarding the thought life of the people from whom they were obtained.

J. R. SWANTON.

The Lillooet Indians. By JAMES TEIT. Publications of the Jesup North Pacific Expedition, Vol. II, Part V. Leiden and New York, 1906. 4°, 300 pages.

As all American anthropologists are aware, Teit's "Thompson River Indians" ranks as one of the very best monographs on any single American tribe. The work before us repeats the excellent qualities of that publication, but is not so extensive, partly on account of the smaller size of the tribe with which it deals, and partly because it presupposes much of the information contained in that work, the two tribes being neighbors and sharing very many of the same usages and customs. Like the Thompsons the Lillooet are an interior Salish tribe, but their habitat is nearer the coast, and they have therefore been more subject to coast influences. This is seen to some extent in their arts and industries, but more particularly in their social organization which partakes of the nature of the gentile organizations of the coast Salish. Teit enumerates nine gentes or clans which are exogamic and each of which is characterized by the possession of an animal totem or crest, but descent may work in either direction, a man belonging to the gens of his father or that of his mother. This gives us another interesting type of social organization which theorists would do well to take notice of. Besides social questions students will here find abundant information on the material culture, warfare, games and pastimes, customs relating to birth, childhood, marriage, and

death, and on religion. The last nine pages are devoted to a comparative discussion of Mr Hill-Tout's article on the same tribe published in the *Journal of the Anthropological Institute of Great Britain and Ireland*, vol. XXXV, 1905, pages 126–218. Little can be added except to say that here we have another standard work in anthropology.

J. R. SWANTON.

Anthropological Essays Presented to Edward Burnett Tylor in Honour of his 75th Birthday, October 2, 1907. Oxford: The Clarendon Press, 1907. Imp. 8vo, viii + 416 pp. Price 15 s.

This interesting and valuable volume contains a collection of essays written in honor of Professor Tylor — England's most eminent anthropologist — and presented to him on his 75th birthday, October 2, 1907, in recognition of his work in promoting the science of anthropology. The essays, nineteen in number, were written by English scholars, many of whom are or have at some time been associated with Professor Tylor in his work at Oxford. This adds a special interest to the volume. In addition to the essays, which cover a wide range of subjects, there is a short biographical sketch of Professor Tylor prepared by Mr Andrew Lang, and also a bibliography compiled by Barbara W. Freire-Marreco including two hundred and sixty-two items dating from 1861 to 1907.

The essays included in the volume are as follow:

HENRY BALFOUR, M.A.: The Fire-Piston, with map and plates.

A. E. CRAWLEY, M.A., F.R.A.I.: Exogamy and the Mating of Cousins.

D. J. CUNNINGHAM, M.D., D.Sc., LL.D., D.C.L., F.R.S.: The Australian Forehead, with plates.

L. R. FARNELL, D.Litt.: The Place of the 'Sonder-Götter' in Greek Polytheism.

J. G. FRAZER: Folk-lore in the Old Testament.

ALFRED C. HADDON: The Religion of the Torres Straits Islanders.

E. SIDNEY HARTLAND, F.S.A.: Concerning the Rite at the Temple of Mylitta.

ANDREW LANG, M.A., LL.D.: Australian Problems.

R. R. MARETT: Is Taboo a Negative Magic?

CHARLES S. MYERS, M.A., M.D.: The Ethnological Study of Music.

J. L. MYRES: The Sigynnae of Herodotus: An Ethnological Problem of the Early Iron Age.

C. H. READ, F.S.A.: A Museum of Anthropology, with plan.

Sir JOHN RHŶS: The Nine Witches of Gloucester.

WILLIAM RIDGEWAY, M.A., F.B.A., Hon. D. Litt.: Who were the Dorians?

W. H. R. RIVERS: On the Origin of the Classificatory System o Relationships.

C. G. SELIGMANN, M.D., and T. A. JOYCE, M.A. : On Prehistoric Object in British New Guinea, with plates and text figures.

NORTHCOTE W. THOMAS, M.A. : The Origin of Exogamy.

ARTHUR THOMPSON, M.A. : The Secret of the Verge Watch: A Stud in Symbolism and Design, with plates.

EDWARD WESTERMARCK, Ph.D. : L'Âr, or the Transference of Condi tional Curses in Morocco.

Space forbids a specific reference to the different essays, all of whicl are of great interest. One, however, will appeal to all who are intereste in the advancement of anthropology — that by Mr Read, entitled "A Museum of Anthropology." In this paper attention is again called t the vast amount of work which should be done in the widely separate corners of the empire before it is too late; slowly but surely the char acteristics and customs of the native peoples are becoming lost by thei contact with Europeans. And it is to be deplored that the British Gov ernment does not aid in collecting information pertaining to the peculia habits and beliefs of the many dependent tribes in its various colonies, for "many a native revolt, involving the loss of much money and many valuable lives, could have been avoided, if only the white man had been able to enter into the ideas of his brown or black neighbour."

D. I. BUSHNELL, JR.

SOME NEW PUBLICATIONS

BEAUCHAMP, W. M. Aboriginal Place Names of New York. Bull. New York State Museum, no. 108, Albany, 1907.

CHATELLIER, P. DU. Les Époques Préhistoriques et Gauloises dans le Finistère. Quimper, 1907.

CHURCHILL, WM. Weather Words of Polynesia. Memoirs American Anthropological Association, II, pt. 1. Lancaster, Pa.: New Era Printing Co., 1907. 8°, 98 pp. (80c.)

COMPTON, M. American Indian Fairy Tales. New York, 1907.

COWELL, E. B., *editor*. Jâkata, or Stories of the Buddha's Former Births; Translated from the Pâli by Various Hands. Vol. VI, translated by W. H. D. Rouse. Cambridge (Eng.), 1907.

CURTIS, NATALIE. The Indians' Book. An Offering by the American Indians of Indian Lore, Musical and Narrative, to form a Record of the Songs and Legends of their Race. Illustrations from Photographs and from Original

Drawings by Indians. New York and London: Harper & Brothers, 1907. Roy. 8°, 574 pp. ($7.50.)

DESPLAGNES, *Lieut.* LOUIS. Le Plateau Central Nigérien. Une Mission Archéologique et Ethnographique au Soudan français. Paris: Émile Larose, 1907. 8°, ii, 504 pp., 119 photo pl., map.

DIXON, ROLAND B. The Shasta. Bull. Am. Mus. Nat. Hist., XVII, pt. 5, New York, 1907.

DUBUQUE, H. A. The Fall River Indian Reservation. Fall River (Mass.), 1907.

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ECHEVERRÍA Y VEYTIA, M. F. DE. Los Calendarios Mexicanos. Edición del Museo Nacional de México. Mexico, 1907. Folio, xii, 7–63 pp., 8 pl.

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——— The Aborigines of Porto Rico and Neighboring Islands. Reprinted from 25th Rep. Bur. Am. Ethnology, Washington, 1907.

——— Certain Antiquities of Eastern Mexico. Reprinted from 25th Rep. Bur. Am. Ethnology, Washington, 1907.

FRAZER, J. G. Questions on the Customs, Beliefs, and Languages of Savages. Cambridge (Eng.): University Press, 1907. 16°, 51 pp.

GESCHICHTE des Inkareiches von Pedro Sarmiento de Gamboa. Herausgegeben von Richard Pietschmann. Berlin: Wiedmannsche Buchhandlung, 1906. 4°, cxviii, 161 p. (Abh. d. Konigl. Ges. d. Wiss. zu Göttingen, Philol.-Hist.-Klasse. Neue Folge, Band IV, No. 4.)

HAMY, E. T. Croyances et Pratiques Religieuses des Premiers Mexicains. Le Culte des Dieux Tlaloques. Paris, 1907.

HARTMAN, C. V. Archeological Researches on the Pacific Coast of Costa Rica. Extract from the Memoirs of the Carnegie Museum, III, no. 1, Pittsburg, 1907. 4°, 188 pp., 47 pl.

To be reviewed in a forthcoming issue.

HRDLIČKA, ALEŠ. Skeletal Remains Suggesting or Attributed to Early Man in America. Bull. 33, Bur. Am. Ethnology, Washington, 1907. 8°, 113 pp., 21 pl., 16 figs.

JACOBSON, E. *and* VAN HASSELT, J. H. De Gong-Fabricatie te Semarang. Rijks Ethnographisch Museum Pub., ser. 2, no. 15, Leiden, 1907.

JOHNSON, J. P. The Stone Implements of South Africa. London: Longmans, Green & Co., 1907. 4°, 53 pp., 19 fig.

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A religious work translated into the Ojibwa language.

KRAUSE, FRITZ. Die Pueblo-Indianer. Eine historisch-ethnographische Studie. Abh. d. Kaiserl. Leop.-Carol. Deutschen Akademie der Naturforscher, LXXXVII, no. 1, Halle: 1907. 4°, 226 pp., tables, 10 pl.

A good summary, with a useful bibliography. Plate 1, incorrectly labeled Ho illustrates a Navaho.

KROEBER, A. L. Shoshonean Dialects of California. University of Ca fornia Pub., American Archæol. and Ethnol., IV, no. 3, Berkeley, 1907.

——— Indian Myths of South Central California. University of Ca fornia Pub., Am. Archæol. and Ethnol., IV, no. 4, Berkeley, 1907.

A summary of the recent anthropological publications of the University of Califor will appear in the next issue of the *American Anthropologist*.

——— The Arapaho. IV. Religion. Bull. Am. Mus. Nat. His XVIII, pt. 4, New York, 1907.

——— Gros Ventres Myths and Tales. Anthr. Papers Am. Mus. N Hist., I, pt. 3, New York, 1907.

MCDAVID, M. O. Princess Pocahontas. New York, 1907.

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PICKETT, T. E. The Quest for a Lost Race. Alphabetical Series Norse, Norman, and Anglo-Norman, or Non-Saxon Surnames. Filson Cl Publications, No. 22. Louisville, Ky., 1907. 4°, xxiii, 229 pp., ill.

The volume presents the theory of Du Chaillu "that the English-speaking people to-day are descended from the Scandinavians rather than the Teutons — from the Norma rather than the Germans." As a contribution the book is well-nigh worthless.

NARRATIVE of the Captivity of Mrs Johnson. Reprinted from the edition, Windsor, Vt., 1814. Springfield, Mass., 1907.

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To be reviewed in a forthcoming number.

SCHULLER, R. R. Sobre el origen de los Charrúa. Réplica al Doct Jorge Friederici, de Leipzig. Santiago de Chile: Imprenta de Cervantes, 190 8°, 158 pp., map, charts.

——— Novus Orbis. ¿De A. Montanus o de O. Dapper? (Material para una bibliografía del idioma Auracano.) Santiago de Chile [1907?] 8°, 18 pp., ill.

SCHULTZE, E. Die Eroberung von Mexiko. Drei Eigenhändige Berich von Ferdinand Cortez an Kaiser Karl V. Hamburg, 1907.

SPECK, FRANK G. The Creek Indians of Taskigi Town. Memoi American Anthropological Association, II, pt. 2. Lancaster, Pa.: New Er Printing Co., 1907. 8°, 66 pp., 5 pl. (55c.).

THRUM, T. G. Hawaiian Folk Tales. Chicago, 1907.

WENDT, W. Die Entwicklungstendenzen und die Zukunst der Mensch heit. Leipzig: Thüringische Verlags-Anstalt, 1907. 12°, 43 pp.

PERIODICAL LITERATURE

CONDUCTED BY DR ALEXANDER F. CHAMBERLAIN

[NOTE. — Authors, especially those whose articles appear in journals and other serials not entirely devoted to anthropology, will greatly aid this department of the *American Anthropologist* by sending directly to Dr A. F. Chamberlain, Clark University, Worcester, Massachusetts, U. S. A., reprints or copies of such studies as they may desire to have noticed in these pages. — EDITOR.]

GENERAL

Anthony (R.) Une adaptation du thorax des vieillards aux fonctions respiratoires. Le mécanisme de production de l'articulation intrachondrale de la première sternocôte. (B. Soc. d'Anthr. de Paris, 1906, v^e^ s. VII, 393-401, 3 fgs.) From examination of 59 subjects (from feti to above 60 years) concludes that the diarthrodial articulation of the first sternal rib occurs only in those above 60 and is notably more frequent in men. Its formation is related to the needs of respiration and is a sort of adaptation of old age.

d'Aubigné (G. F.) Nos traditionnistes et historiens. H. G. van El. (La Tradition, Paris, 1907, XXI, 5-8, portr.) Sketch of life and works of Gabriel van El (b. 1850), writer, folklorist, artist, collector, of Caen in Calvados.

Avelot (—) Sur un questionnaire de linguistique. (B. Soc. d'Anthr. de Paris, 1906, v^e^ s., VII, 403-405.) Pleads for a short, simple *questionnaire* on language and proposes a special linguistic committee of the Society.

Baudouin (M.) Les tératomes ne sont que le vestige de l'un des sujets composants d'un monstre double. (Ibid., 462-482.) General and particular discussion of true monster-tumors, which Dr B. considers to be vestigia of one of the component subjects of a double monster, their nature, origin, evolution, etc. Radiography is advocated.

Belck (W.) Die Erfinder der Eisentechnik insonderheit auf Grund von Bibeltexten. (Z. f. Ethnol., Berlin, 1907, XXXIX, 334-381.) B. believes that the Bible passage I. Sam. 13, XIX-XXII is the oldest mention of iron objects and that the real inventors of the iron industry were the Philistine-Phœnicians, from whom it passed to the other peoples of Asia Minor, the Mediterranean, etc., — they were particularly the discoverers of the practical art of steel-making. In the discussion Blanckenhorn favored an Egyptian origin (ultimately perhaps from Negro-land) and von Luschan expressed the opinion that there is no doubt of the invention of the art of iron smelting by the Negroes of Africa, from whom it passed to Egypt, thence to Syria and the other regions of the Mediterranean.

Delisle (F). Exostoses du fémur. (B. Soc. d'Anthr. de Paris, 1906, v^e^ s., VII, 484-486.) Describes a femur with exostosis resembling the femur of Trinil, in the (18th century) collection of the Museum of Natural History; also a Negro femur with exostosis from a grave in Grand-Bassam, Ivory Coast, obtained in 1899. Exostoses, Dr D. thinks, are more common than is generally believed and do not belong particularly to any one race.

Dubreuil-Chambardel (L.) La langue scrotale. (Ibid., 351-353, 1 fg.) Discusses the "scrotal" (i. e., with deep furrows giving the "folded" appearance of the scrotum) tongue, an anomaly to be distinguished from both pathological tongue-furrows due to disease (e. g., syphilis, cancer, tuberculosis, eruptive fevers, etc.) and physiological furrows normally occurring on the tongue, and very rare (ca. 1 in 1,000 subjects). It seems to be a congenital anomaly, a simple anatomical variation of unknown morphogeny.

—— Deuxième note sur la langue scrotale. (Ibid., 486-490, fg.) Details of "scrotal tongue" in man of 60 years from Auxerre, observed in Sept. 1906. The case is not a stigma of degeneracy.

van Elven (H. G.) La légende des

nutons devant la science et l'histoire. (La Tradition, Paris, 1907, XXI, 15-20.) Conclusion of study of the legendary dwarfs known as *nutons, halvermannekens, Heinzelmänner, petits travailleurs, korrigans, duergars, monticolæ, Portuni, Neptuni, dwarfs*, etc. According to the author "these ante-Celtic peoples were neither more nor less than the Atlantes or Iberi" (clothed by the poetic and religious imagination of the Indo-Europeans), the oldest historical inhabitants of western Europe.

Girardin (P.) Le baron Ferdinand de Richthofen. (Bull. Soc. Neuchât. de Géogr., 1906, XVI, 328–33, portr.) Sketch of life and scientific activities of Richthofen (1883–1905), the geographer.

Hahn (E.) Ueber Entstehung und Bau der ältesten Seeschiffe. (Z. f. Ethn., Berlin, 1907, XXXIX, 42–56.) Treats of the origin and construction of the oldest boats. Vessels made of bladders and skins of animals, widely diistributed in ancient times and among modern primitive peoples (Mesopotamia, Eskimo, certain Indians of N. and S. America, Wales, etc.); vessels and rafts made of rushes and reeds, sometimes very serviceable and technically perfect (Ngami in Africa, American Indians, — balsas, — huge bamboo rafts of the Indies, etc.); vessels of wood (rafts and boats) and bark (highly developed among certain American Indian tribes, etc.), "dug-outs," etc., are considered. H. rejects the theory that the tree-trunk was the oldest vessel of primitive man; the outrigger vessel of the Pacific islands is the result of the combination of the dug-out and the catamaran; the really seaworthy boat developed from the seamed vessel, going back to the bark boat; an interesting connection between bark boats and water-receptacles of the same material exists, the latter being the more primitive; the use of wood for boats in certain parts of the world is not easy, since the best and most workable woods often will not float; the great row-boats and sail-boats of ancient Egypt have back of them the primitive African vessels of bark.

Kassel (C.) Fertility and genius. (Pop. Sci. M., N. Y., 1907, LXXI, 452–454.) Cites statistics to show the large number of children in families producing men of genius. K. also believes that "those who were members of large families were in general distinguished for great firmness of character."

Kompinski (A.) Beitrag zur Theorie des Versehens der Schwangeren. (Z. f. Ethnol., Berlin, 1907, XXXIX, 418–422, 3 fgs.) Treats of "maternal impressions." At p. 420 is figured a piece of calf-skin forming "a perfect silhouette of a Polish Jew," interesting from the psychological point of view as to what can be "seen." In the discussion Dr v. Luschan cited certain "eoliths" as exhibiting similar "plays" of nature.

Kittredge (G. L.) Some notes on witchcraft. (Proc. Amer. Antiq. Soc., Worcester, 1907, N. S., XVIII, 148–212.) Treats of the belief in witchcraft and its consequences in the seventeenth century, particularly in New England. Prof. K. concludes that "witchcraft is the common heritage of humanity," and "is not chargeable to any particular time or race, or form of religion"; also that "witchcraft, in some shape or other, is still credited by a majority of the human race." In the seventeenth century "the belief in witchcraft was practically universal, even among the educated," and "to believe in witchcraft was no more discreditable to a man's head or heart than it was to believe in spontaneous generation, or to be ignorant of the germ theory of disease." Considered as a whole, and from the comparative point of view, "the record of New England in the matter of witchcraft is highly creditable."

Knapp (C.) Charles Piton. (Bull. Soc. Neuchât. de Géogr., 1906, XVI, 333–336, portr.) Brief account of life and works of Charles Piton (1835–1905), missionary and Sinologue. A second edition of his *La Chine, sa religion, ses mœurs, ses missions* appeared in 1902.

v. Luschan (F.) Ueber einen Haarmenschen. (Z. f. Ethnol., Berlin, 1907, XXXIX, 425–429, 1 fg.) Discusses the question of "hairy men," from the points of view of "abnormality," variety of the phenomenon, connection with dental deterioration, heredity, with particular reference to Stephan Bibrowsky, 15 years old, with no head or beard hair, no eyebrow or eye-lash hair, but simply long thick *lanugo* hair. Neither atavism nor vicarious substitution of hair for teeth will explain the phenomenon, which is not so simple as it has been thought by some.

Mazel (H.) M. Edmond Demolins. (Mercure de France, Paris, 1906, LXIX, 453–458.) Appreciation of educational

and sociological labors. His works of anthropological interest were *Les Français d'aujourd'hui* and *Les Routes de l'antiquité et les Routes des temps modernes*. He was best known perhaps by his flattering discussion of "Anglo-Saxon superiority."

Papillault (G.) Conclusions générales sur les associations humaines. (R. de l'Éc. d'Anthr. de Paris, 1907, XVII, 222–238.) Discusses "groupings by resemblance" as distinguished from "groupings by contiguity." Of associations by resemblances the following are considered: age-classes (Schultz),—simple frames for the successive generations of a tribe at first, then more complicated societies, hereditary classes, etc., with variable extension, instability, reciprocal influence, transformations, etc., but all conditioned by the resemblances of their members, the primordial cause. In association by contiguity the essential factor is diversity of aptitudes nourishing natural selection; in association by resemblance voluntary cooperation accentuating similitude by appropriate education.

Pearson (K.) The scope and importance to the state of the science of national eugenics. (Pop. Sci. M., N. Y., 1907, LXXI, 385–412, 8 fgs.) Argues, with statistics of normal and pathological inheritance, fertility, etc., for "the reduction of bad stock," and "the increase of good stock," by the creation of a science of national eugenics by means of which "the biological sciences shall begin to do for man what the physical have done for more than a century." Prof. P. thinks he sees "a direct correlation between the achievements of Greece and the intensity of its intertribal struggles."

Regnault (F.) Mon opinion sur un point de morphogénie osseuse. (B. Soc. d'Anthr. de Paris, 1906, V^e^ s., VII, 432–433.) Reply to M. Papillault's critique of R.'s theory of osseous morphogeny.

Rutot (A.) Causeries sur les industries de la pierre avec démonstration scientifique et pratique de l'existence de l'industrie éolithique. (R. de l'Éc. d'Anthr. de Paris, 1907, XVII, 283–294.) Gives results of long series of experments in the manufacture and use of flint implements. The "eoliths" are so like the paleoliths and neoliths, R. holds, that all have to be accepted together.

Sampson (J.) Gypsy language and origin. (J. Gypsy Lore Soc., Liverpool, 1907, N. S., I, 4–22.) Discusses various solutions of "the Romani riddle," particularly the studies of Pott, Paspati, Kounavine, Beames, Miklosich, de Goeje, etc. According to S., "Romani is not only an Indian, but a modern Indian tongue which can only have originated under the same conditions and about the same as the other Indian vernaculars." The "purest and deepest European dialect of Romani" is that of the Græco-Turkish Gipsies. The Gipsies are Aryan, and the main body, after leaving India (some time before the tenth century), divided into two sections, one passing northward via Armenia into Europe, the other turning south and settling in Syria. In the Asiatic Gipsy dialects survive many original words, lost, or replaced by European loan-words, among the western Gipsies.

Schlaginhaufen (O.) Zur Diagraphentecknik des menschlichen Schädels. (Z. f. Ethn., Berlin, 1907, XXXIX, 85–107, 14 fgs.) Treats of the method of obtaining diagraph-curves (sagittal, frontal, horizontal), the skulls used in illustration are Battak, Russian, Australian, Mariane Ids., Central Switzerland, Disentis) according to the system of the Sarasins with the "Kuboskraniophor" of Prof. R. Martin.

Siffre (—) Rapport de l'os et de la dent à propos d'une mandibule de gorille fracturée au moment de la formation de la 3^e^ molaire. (B. Soc. d'Anthr. de Paris, 1906, V^e^ s., VII, 385–392, 5 fgs.) Describes and discusses a gorilla jawbone broken at the time of the formation of the third molar (lower left) and the result of such traumatism on the teeth, etc.

Trillat (P.) *et* **Jarricot** (J.) Vérification post-mortem d'un pelvigramme radiographique obtenu par la méthode du Professeur Fabre. (Ibid., 438–443, 2 fgs.) Shows by measurements of radiographic pelvigram and the dry pelvis post-mortem the excellence of Fabre's radiographic method. The average error is very small.

Variot (G.) Nouvelles recherches sur l'ossification des métacarpiens et des phalanges chez les enfants normaux et chez les hypotrophiques. Erreur d'un anatomiste français sur l'époque d'apparition des points complémentaires. (Ibid., 405–415, 6 fgs.) Gives results of radiographic studies of the hands of 30 normal

and 100 atrophic and hypertrophic children from 4 months to 8 years of age. The appearance of the complementary points of the metacarpeans dates from about the second year and of those of the phalanges from about the third, — Kölliker is therefore nearly right and Porier wrong. Cases of hypertrophy of gastro-intestinal origin are considered.

Waagen (L.) Der heutige Stand der Eolithenfrage. (Mitt. d. K.-K. Geogr. Ges. in Wien, 1907, L, 345-350.) Résumés recent article on the "eolith" question by Boule, Obermaier, Deecke, Wilgers. The author concludes that the evidence favors a natural and not a human origin for the "eoliths," and that the proofs for the existence of Tertiary man are thereby considerably reduced.

EUROPE

Axon (W. E. A.) A Gypsy tract from the seventeenth century. (J. Gypsy Lore Soc., Liverpool, 1907, N. S., I, 68-72.) Reprints a tract of 1673 relating the tragic death of the King of the Warwickshire Gipsies.

Behlen (H.) Der diluviale (paläolithische) Mensch in Europa, nach den neueren geologischen, paläontologischen und anthropologischen Forschungen; eine Kritische Studie. (M. d. Anthr. Ges. in Wien, 1907, XXXVII, 1-17, 72-84.) Critical résumé and discussion of the recent investigations of paleolithic man in Europe (geological, paleontological, and anthropological, — Hoernes, Penck and Brückner, extra-Alpine data, Langenaubach and Studen, Krapina and Taubach, "eoliths," physical characters of diluvial man. B. holds that no older remains or traces of man than those of Taubach have been shown to exist and doubts "eoliths" in general.

Bericht über die im Jahre 1906 in Oesterreich durchgeführten Arbeiten. (Stzgb. d. Anthr. Ges. in Wien, 1907, 33-46, 7 fgs.) Résumés archeological investigations of 1906 in Lower and Upper Austria, Salzburg, Carinthia, coast country (great grotto of Briščiki, etc.; southern Istria), Dalmatia, Bohemia (neolithic "station of Drobovic; report on investigations in German Bohemia), Moravia, Bukowina (finds of the old Mycenean age), etc.

Blémont (É.) La légende flamande de la "Mégère apprivoisée." (La Tradition, Paris, 1907, XXI, 8-14.) First part of a study of the Flemish legend of "The Taming of the Shrew." The "shrew" seems to have been Matilda of Flanders, spouse and queen of William the Conqueror.

Bünker (J. R.) Das Bauernhaus der Gegend von Stams im Oberinntale, Tirol. (M. d. Anthr. Ges. in Wien, 1906, XXXVI, 187-238, 51 fgs. map.) Detailed description and discussion of the peasant-house of the Stams region, upper Inn valley, Tirol, the arrangement of houses and land, etc. B. treats of 14 houses in particular. The upper Inn valley houses are of complex, not simple type. B. thinks they have the same origin as those of German Upper Carinthia which they closely resemble even in minute details. For the Stams house a development from a Bavarian basis is argued.

Busse (—) Ueber das Verschwinden vorgeschichtlicher Ansiedlungen und Gräberfelder. (Z. f. Ethnol., Berlin, 1907, XXXIX, 415-417, 2 fgs.) Records the disappearance, through wood-cutting, quarrying, etc., of several prehistoric "stations" and burial-places at lake Scharmützel in the Beeskow-Storkow region. This sort of "vandalism" is so prevalent that education of the people in these localities seems necessary.

Calandra (C.) Canti popolari raccolti a Frasso Telesino. (A. p. lo Stud. d. Trad. Pop., Torino, 1907, XXIII, 440-49). Texts of 39 brief folk-songs from Frasso Telesino.

Commont (V.) L'industrie de la base de la terre à briques à Saint-Acheul, Montières, Belloy-sur-Somme. (R. de l' Éc. d' Anthr. de Paris, 1907, XVII, 239-263, 26 fgs.) Discusses in detail the implements of the brick-earth layer (upper Quaternary) at St Acheul, — the characteristic implements are long blades with frequent lateral deep flakings. The climate of this epoch resembled that of northern Europe, etc., to-day; the people knew the use of fire, hunted the reindeer, bison, etc.

Corso (R.) Proverbi giuridici Italiani. (A. p. lo Stud. d. Trad. Pop., Torino, 1907, XXIII, 484-506.) First part (introduction, etc.) of a study of Italian legal proverbs. "Legal archeology," imitation and tradition, the aged and the antiquated usage, custom and proverb, *carmina necessaria*, regulation of savage societies by legal proverbs, the folk sources of law and suggestions of reform,

rural law. The proverb is "a collective work, having the spirit and the form of good common sense without the solemnity and gravity of the aphorism."

Crofton (H. T.) Supplementary annals of the Gypsies in England, before 1700. (J. Gypsy Lore Soc., Liverpool, 1907, N. S., I, 31-4.) Notes on arrests, punishment, births, baptisms, marriages, and other references to Gipsies in 1536–1591, 1607–1696.

Fabrizio (A. E.) Saggi di Folklore Salentino. (A. p. lo Stud. d. Trad. Pop., Torino, 1907, XXIII, 389–98.) Treats of the ceremonies and customs of the "great week" (holy week) in the Salentine peninsula, — processions, representation of the passion of Jesus, etc.

Ferraro (G.) Canti popolari in Casteldelfino. (Ibid., 477–83.) Dialect texts, with literary Italian versions and notes, of 6 folk-songs from Casteldelfino, including "a little pastoral drama," called *Ouresùn* (Orazione) and an exorcism.

Fuchs (K.) Professor Karl Fuchs' Ansichten über das Vorbild des griechischen Tempels. (Mitt. d. K.-K. Geogr. Ges. in Wien, 1907, L, 354–358.) Résumés and discusses the article of Prof. K. Fuchs on the origin of the Greek temple (see *American Anthropologist*, 1905, VII, 541) and concludes that "it is now proved that the Greek temples had their prototype in the house (for human beings and cattle together) of the Roumanian Alp-land."

Giorgi (P.) Invettiva d'un contadino contro il governo provvisorio in Toscana. (A. p. lo Stud. d. Trad. Pop., Torino, 1907, XXIII, 430–34.) Gives text of an invective poem of a native of Siena against the provisional Tuscan government and the dictatorship of Guerrazzi after the flight of Leopold II (1849).

Gouÿ (P.) Note sur l'anthropologie ethnographique de l'Ardèche. (R. de l'Éc. d'Anthr. de Paris, 1906, XVII, 266–268.) The department of Ardèche exemplifies the juxtaposition and partial *métissage* of the two peoples, Celts and Kymri, — the primitive Celts who resisted Cesar, and the later immigrants from Britain. Interesting linguistically is the line of *c* and *ch*; also the two *patois* of Tournon. Gothic physical types occasionally occur, likewise Arab in the interior valleys. See *Herve*.

Hahne (H.) Neue Funde menschlicher Geräte aus dem Diluvium von Taubach und Ehringsdorf. (Z. f. Ethn., Berlin, 1907, XXXIX, 261–262.) Brief account of finds of flint implements, etc., made in Sept., 1905, and April, 1906, in the Taubach-Ehringsdorf diluvium, some of which are in the possession of private individuals, others in the museums of Weimar, Jena, Magdeburg. These finds reduce the age of the Taubach remains; they can now be compared with more developed paleolithic industries elsewhere.

Hervé (G.) Au sujet des mongoloïdes de France. (R. de l'Éc. d'Anthr. de Paris, 1907, XVII, 264–265, 1 fg.) Calls attention to the presence of "Mongoloids" in the mountain region of the Cevennes (Ardèche, etc.), according to P. Gouy, who estimates this element as 5 to 10 per cent. of the population. A woman of Quimper is figured as illustrating the "Mongoloid" type of the far west in France. See *Gouÿ*.

Howáth (A.) Crania salonitanea. Beschreibung einer Reihe von Schädeln der altchristlichen Begräbnisstätte Salonas, bei Spalato, Dalmatien. (M. d. Anthr. Ges. in Wien, 1906, XXXVI, 239–248; 1907, XXXVII, 39–51, 3 pls.) Describes, with details of measurements, 9 skulls from the early (Diocletian) Christian burial-place of Salona, near Spalato in Dalmatia. They are typically dolichocephalic with a tendency to nannocephaly.

Jentsch (—) Eine vorgeschichtliche Tonschale mit Leistengestell von Klein-Gaglow bei Cottbus. (Z. f. Ethnol., Berlin, 1907, XXXIX, 423–425, 1 fg.) Describes a prehistoric clay dish with support of peculiar form, now in the Cottbus Museum.

Krauss (F. S.) Two Gypsy tales from Slavonia. (J. Gypsy Lore Soc., Liverpool, 1907, N. S., I, 65-68.) Servian texts with English version: "How a Gypsy tilled the (priest's) glebe," and "How the Gypsy outwitted the priest." The Gipsies of Požega are externally patriotic Croatians, having given up their Gipsy speech. Up to about 1875 there were still a few who could talk Romani.

Kupka (—) Das Campignien im nordeuropäischen Glazialgebiet. (Z. f. Ethn., Berlin, 1907, XXXIX, 192–224, 28 fgs.) Critical résumé of recent literature (Salmon, D'Ault du Mesnil, Capitan, de Mortillet, Madsen, Müller, Neergard, Sarauw, etc.) on the Campignian epoch and its human artifacts (stone, bone, pottery) in the glacial area of northern Europe (Campigny, Maglemos, Calbe) are composed and contrasted).

At Campigny no bone objects occur, though abundant at the other "stations"; at Maglemos and Calbe pottery is entirely absent. Other differences are also noted. The remains of branches of burnt coniferæ at Maglemos point to a date in the first part of the late Quaternary, and the Calbe remains seem to belong with those of Maglemos, — both primitive communities probably lived on rafts. Maglemos and Galbe represent an older Campignian.

Ledieu (A.) Blason populaire de la Picardie. (La Tradition, Paris, 1907, XXI, 54-68.) Continuation, *Harponville-Lavicogne*, of popular nicknames and sayings concerning the towns, villages, etc., of Picardy. "Huguenots" seems to be a common nickname for places having a Protestant element.

Leland (C. G.) Shelta, or the last language of the bards, and how it was recovered. (J. Gypsy Lore Soc., Liverpool, 1907, N. S., I, 73-74.) L. discovered that "the Celtic bards had an artificial secret tongue peculiar to themselves, known as Shelta," and with Sampson and Mayer demonstrated that "this secret and sacred tongue of ancient days was identical with that of the British Tinkers of the present time."

—— The tinkers. (Ibid., 76-81.) Notes on tinkers ancient and modern, — *ferramentarici, novacularii, arruotatori, cortellari, calderari, stagnarini, tinklers, tinkers*, etc. The tinker fraternity of Great Britain began to pass with the advent of the railroads, *ca.* 1845.

Manouvrier (L.) Note sur les ossements néolithiques du dolmen de Curton et de la caverne de Fontarnaud, Gironde. (B. Soc. d'Anthr. de Paris, 1906, Ve S., VII, 342-346.) Describes, with measurements, neolithic human bones (tibias and femurs). At the cavern of Fontarnaud Magdalenian remains have been succeeded by neolithic sepulture and that again by Gallo-Roman occupancy. At Curton at least 8 adults were buried, and at Fontarnaud 4 adults and 5 children.

de Marchi (E.) Proverbi e sentenze Tedesche. (A. p. lo Stud. d. Trad. Pop., Torino, 1907, XXIII, 435-439.) Gives Italian translations of 118 proverbs, etc., from the German.

Mielke (R.) Die bisherigen Ergebnisse des Fragebogens zur Hausforschung. (Z. f. Ethn., Berlin, 1907, XXXIX, 80-4.) Résumés results of questionnaire inquiry (299 replies out of 2,700 sent out) on the house-types of the province of Brandenburg. The Saxon house occupies the extreme N. W.; the Frankish (Oberdeutsch) is spread over the whole province; the house of the Wendish region has an "Oberdeutsch" cast with certain variations. Interesting are the relations of the so-called "Laubenhaus" to other types. The arrangements of buildings in the yard, the details of the dwelling-house, barns, etc., are of importance. The very numerous windows in houses in the Sorau region are explained by reason of the former carrying on of much house-weaving. M. is of opinion that the "Laubenhaus" in its oldest form is identical with the "Dielenhaus," both being really but variations of the "Saxon house."

Pitré (G.) Novelle popolari Toscane. (A. p. lo Stud. d. Trad. Pop., Torino, 1907, XXIII, 399-420.) Gives texts of four Tuscan folk-tales, — Cenerognola (a fine type of the Cinderella story); la Tramontana (tale of countryman and nuns); the three faithful hunters, etc.

Raccuglia (S.) Canti popolari raccolti in Novara-Sicula. (Ibid., 450-70.) Texts of 79 brief folk-songs from Novara-Sicula.

Reber (B.) Zur Frage des Aufenhaltes der Hunnen und Sarazenen in den Alpen. (Mitt. d. K.-K. Geogr. Ges. in Wien, 1907, L, 293-311.) Résumés and discusses the evidence of the former presence in the Alps of Huns and Saracens, — data in chronicles, folk-tradition, etc. the Vex festival of victory over the "wild heathen," "Saracen" and other stories, place-names. The presence of Huns and Saracens in this region is important from the standpoint of culture-history and folk-lore. Bibliography of 32 titles.

Sampson (J.) Welsh Gypsy folk-tales. (J. Gypsy Lore Soc., Liverpool, 1907. N. S., I, 26-30.) Gypsy text and English version of "The Black Lady," from Merioneth. The dialect is "the speech of the 'Teulu Abram Wd.'" In Welsh Gypsy *minâ* (i. e., "me not"), now used like *nicht wahr?* in German, is employed "just as Welshmen use 'isn't it?' when trying to speak English."

Sarasin (P.) Ueber die Entwicklung des griechischen Tempels aus dem Pfahlhause. (Z. f. Ethn., Berlin, 1907, 56-79, 15 fgs.) Dr S., from his careful observations of the pile dwellings of the natives of Celebes in particular in comparison with the Doric temple, came to the conclusion that this triumph of Greek

art is merely the beautifying and conventionalizing of the pile-dwelling, common both on land and in marsh, lake, etc., in prehistoric times over a large portion of the continent of Europe, as now in the East Indies, etc. This theory is cleverly, perhaps convincingly, set forth in this interesting paper. The details of temple construction are paralleled with those of the pile-dwelling. The columns, the ornamented superstructure, the triglyphs, the metope, correspond to the piles, the dwelling-portion, the window-strips, the partition, respectively. Even the details of the column (the slight upper inclination of the Doric), the so-called ædicula, etc., are all accounted for. The substitution of stone for wood may have been an Egyptian invention.

Schmidt (H.) Beiträge zur Kenntnis und zum Verständnis der jungneolitischen Gefässmälerei Südost-Europas. Eine Duplik. (Ibid., 121–36.) Treats (in reply to Hr Teutsch) the painting on the late neolithic pottery of S. E. Europe, maintaining the position previously taken by the author. S. holds that the white-painting of the Ægean culture is to be derived from the white-painting of Transylvania. See *Teutsch*.

Seelmann (--) Ueber ein Gräberfeld aus der jüngeren La Tènezeit bei Klein-Kühnau, Kreis Dessau. (Ibid., 186–92, 2 fgs.) Describes, with contents (incinerated human remains, rings, needles, fibulæ, ear-rings, hooks, spirals, etc., of bronze and iron, glass beads), numerous urns from a later La Tène burial place at Klein-Kühnau, the first find of this epoch in Dessau.

Siffre (—) Note sur des pièces squelettiques maxillo-dentaires néolithiques. (B. Soc. d'Anthr. de Paris, 1906, v^e^ s., VII, 346–350.) Treats of teeth and maxillary fragments, etc., representing 32 children under 12 years, from a neolithic ossuary at Esbly. Notable are the evidences of wearing down and almost complete absence of caries. This may have some relation to the characteristic food of the period.

v. Stefanovič-Viliovsky (T.) Ueber einige in der Belgrader archäologischen Zeitschrift "Starinar" erschienenen Studien des Dr Miloje M. Vassits. (Stzgb. d. Anthr. Ges. in Wien, 1906, 46–52, 5 fgs.) Résumés archeological papers of Dr Vassits on prehistoric bracelets exhibiting Mycenean influence, ornamented urns, etc., and other remains of ancient Servian culture. Of the six "stations," two only, Basat and Kostolac, have been systematically explored.

Teutsch (J.) Einiges von Aberglauben der Rumänen. (Ibid., XXXVII, 1907, 11–16, 2 fgs.) Notes on Rumanian folklore: Snake and frog as luck-animals, spirit-lore (midnight song of elves, etc.), *jelele* (= Slavonic Vilas), evil demons as cause of disease, the "plague-woman," rôle of naked human body in "magic," weather-charms ("rain mother" and songs), death and burial, etc.

—— Zur Charakteristik der bemalten neolithischen Keramik des Burzenlandes. (Z. f. Ethn., Berlin, 1907, XXXIX, 108–20, 7 fgs.) Replies to criticisms by H. Schmidt (q. v.) of the author's views on the origin, nature, and classification of the ornamental decoration of neolithic pottery, etc. . T. maintains that the Trojan decorations are older than those of Transylvania, etc.

Tocher (J. F.) The anthropometric characteristics of the inmates of asylums in Scotland. (Biometrika, Cambridge, 1907, V, 298–350, many diagrams, tables, maps.)

—— Anthropometric survey of the inmates of asylums in Scotland. (Ibid., Suppl., 1906, 1–96, tables and map.) These two articles, the last entirely statistical, give details of the measurements (head, nose, stature, color of hair and eyes, etc.) of 4436 male and 3951 female patients in 22 asylums in various parts of Scotland, made in 1903–4. In the head size and shape, there is "not much obvious differentiation between sane and insane," — the North is brachycephalic, the S. W. dolichocephalic, the large town relatively microcephalic (S. W., excluding Glasgow, is relatively macrocranial, N. E. brachycranial; North platycranial, Glasgow, Edinburgh, etc., stenocranial). The insane "approach criminals in being a short-statured population." There is noted "a greater tendency to insanity among the light-eyed and dark-haired population than among other color classes." Red-haired and dark-eyed persons seem less liable to insanity. Local populations "differ from each other sensibly in many respects," and great diversity of local race in Scotland is indicated. The abundant statistics of researches make them valuable for comparative purposes.

Valla (F.) Leggende popolari Sarde raccolte in Ozieri. (A. p. lo Stud. d.

Trad. Pop., Torino, 1907, XXIII, 421–429.) Gives texts of four brief Sardinian folk-legends from Ozieri: Legend of St Cyprian and the devil, legend of St Isidore and his master, St Bernard and his sister, January and February (the shepherd and God).

Vauvillé (O.) Présentation et description d'objets divers, découverts dans l'oppidum de Pommiers, Novidunum des Suessions. (B. Soc. d'Anthr. de Paris, 1906, V^e^ S., VII, 422–431, 1 fg.) Lists and briefly describes 131 objects (arms, tools, ornaments, etc.), of bone, metal, iron, glass, bronze, etc., many fibulæ of bronze and iron, fragments of pottery, Gaulish and Roman coins, etc., from the *oppidum* of Pommiers, which seems to have been completely abandoned in 51 B. C. It was probably the ancient *Novidunum* of the Suessiones.

Yoxall (J. H.) A word on Gypsy costume. (J. Gypsy Lore Soc., Liverpool, 1907, N. S., I, 23–25, 1 pl.) Notes on two pictures of a Gipsy fortune-teller (1764) and a Gipsy girl (1806). Y. suggests the preparation of a monograph on Gipsy dress, and the editor the collection in the Journal of "reproductions of such prints and pictures as illustrate the dress which Gipsies wore, and not merely the fertility of the artists' imagination." The picture reproduced represents a Siberian Gipsy telling the fortune of a young woman in Ostiak costume.

Zaborowski (S.) Prétendue preuve de décharnement sur un fémur du Mas d'Azil. (B. Soc. d'Anthr. de Paris, 1906, V^e^ S., VII, 416–418.) Discusses the alleged evidence of the practice of stripping the flesh from human bones, before interring them, presented by a human femur from Mas d'Azil with what has been regarded as marks left on it by a flint used for scraping bones. These marks are rather due to cannibalism, or, perhaps to wild beasts.

—— Origines de la mythologie ancienne des Slaves. (R. de l'Éc. d'Anthr. de Paris, 1906, XVII, 269–282.) Discusses the Slavonic terms for God (*bog*, *bogu*), various other names of deities (*Perun*, *Svantovit*, corresponding to Zeus and Dionysios), their attributes, the cult of fire, etc. The conservative ancient Slavs preserve the proto-Aryan religious customs and ideas, and Z. argues again that the Danubian Slavs are the oldest of that stock.

Zupanič (N.) Die Illyrier. Ein Profil aus der historischen Physioanthropologie der Balkanhalbinsel. (Stzbg. d. Anthr. Ges. in Wien, 1907, 21–24.) Résumés data as to the physical anthropology of the Illyrians. The modern Servians get their body-type mostly to the Illyrians, i. e., the Illyrians since the beginning of the seventh century A. D. The Illyrians represent the people of Glasinac and its culture. In about 2,000 years the Aryan peoples south of the Alps Carpathian-Balkans lost their original xanthodolichocephaly.

AFRICA

Bieber (F. J.) Reise durch Galla-Land nach Kaffa und Dauro. (Ibid., 3–11, 5 fgs.) Gives results of journey made in 1905 through the Galla country. Notes on the Tshimmia Galla, Kaffitsho, Nagado, etc.

Broquet (C.) Résultats du conseil de révision de l'année 1905 à l'île de la Réunion et évaluation de la robusticité des élements ethniques qui forment le contingent créole basée sur 1,463 mensurations et sur l'application du procédé Pignet. (B. Soc. d'Anthr. de Paris, 1906, V^e^ S., VII, 365–385.) Discusses with measurement-tables (height, chest girth, weight, etc.) the anthropometry of 1,463 recruits of 1905, — Hindus, black, brown, white. According to Dr B., the white race in Bourbon, although showing signs of physical decadence as compared with the whites of Paris, maintains its physical superiority over the other races of the island. For the black physical development is attained at 21 years, for the white at 30.

Burnier (F.) De Seshéké à Léalouyi par une route nouvelle. (Bull. Soc. Neuchât. de Géogr., 1906, XVI, 313–323, map.) Contains, at pages 322–323, the month-names, with interpretations, of the Marotse calendar.

Christol (F.) A propos d'une peinture de Busmen. (Ibid., 324–327, 1 fg.) Treats of polychrome paintings by Bushmen found in a deep ravine on a farm in the Smithfield district of the Orange Colony. In the painting are an elephant and an eland, besides an antelope hunted by three Bushmen.

Friedrich (M.) Description de l'enterrement d'un chef à Ibonzo, Niger. (Anthropos, Salzburg, 1907, II, 100–106, 2 pls.) Describes the various phases of the burial of a chief among the natives

of Ibonzo on the Niger, — offerings, dancing, human sacrifice, etc.

Hamy (E. T.) Les mores du roi Réné. (B. Soc. d'Anthr. de Paris, 1906, V^e^ s., VII, 418–420.) Notes on the "blackamoors" of King Réné mentioned in the Angevin records for 1447–1489, particularly the "white Moor," Monnet Alibert, and the "great Moor," Falco (d. 1463).

—— Note sur les collections anthropologiques recueillies par M. le Lieutenant L. Desplagnes dans le moyen Niger. (Ibid., 433–437.) Treats, with measurements, of ancient skulls from the central Niger region (3 from a rock-shelter in Bandiagara, 5 from the Dalla mountains, and 3 from Mt Hombori) collected by Lieut Desplagnes in 1905. They represent hitherto unknown "neolithic Nigerians," with a civilization analogous to that of neolithic Europe. Some of these skulls show greater cranial capacity than modern Sudanese.

—— Aouembas, Warouas, Bangobangos. Notes sur une petite collection de crânes rapportés par Ed. Foà de la région des grands lacs africains. (Ibid., 443–447.) Gives measuremenss of 3 skulls in the Foà collection from the African lake region, compared with 3 others in the Storms collection from the same region and the data in Fülleborn. In the Nyassa-Tanganyika country dolichocephals, mesaticephals, and brachycephals (8 per cent. in Fülleborn's data) are all represented. H. finds the Nuba-Haussa type represented strongly in the skulls collected by Foà.

—— Deux crânes de Whydah. (Ibid., 460–461.) Describes, with measurements, 2 skulls from Whydah in Upper Guinea (now in the Foà collection) and compares them with Popos and Calabar crania, with which they are closely related.

—— Toukou le Haussa. (Ibid., 490–496, 1 fg.) Anthropometric and other details concerning Toukou, a Haussa negro from Sokoto, slave, soldier in the Crimean war, *concierge*, artist's model in Paris, and model for one of the gladiators in the vestibule of the new City Hall.

Levistre (L.) Sur quelques stations dolméniques de l'Algérie. (Anthropos, Salzburg, 1907, II, 135–140, 9 pl.) Treats of the dolmenic "stations" in the neighborhood of Duvivier (province of Constantine) and Nador (on the left bank of the Seybouse) in Algeria, belonging to the first metal age or to the end of the neolithic period, although Roman remains found at Nador indicate the passage of other culture by these places.

Lissauer (A.) Brief aus Algier. (Z. f. Ethnol., Berlin, 1907, XXXIX, 413–415.) Notes on a visit to the Kabyles, among whom all grades of culture are represented, from the primitive hut to the modern Moorish house of the rich, and from almost complete nakedness to European dress. Primitive customs generally prevail. In the schools Christian and Mohammedan children sit on the same benches.

Müller (Ae.) Wahrsagerei bei den Kaffern. (Anthropos, Salzburg, 1907, II, 43–58, 3 pl.) Treats of the "smelling out" of guilty persons by the witch-doctors; gives report of conversations (pp. 50–55) with "doctors."

Müller (F.) Die Religion Togos in Einzeldarstellungen. (Ibid., 201–209.) This continuation of a monograph on the religion of the natives of Togo treats of the worship of the Uwolowu (a good creator god) by the akposo, his cult, the myths about him (why men die, origin of leprosy, U. and his wife and children, origin of pains of child-birth, U. and animals, etc.), the worship of the Nábálá (= U.) by the Anana.

Narbeshuber (K.) Aus dem Leben der arabischen Bevölkerung in Sfax, Regentschaft Tunis mit einem Beitrage von Prof. Hans Stumme in Leipzig. (Veröff. d. Städt. Mus. f. Völkerk. zu Leipzig, 1907, H. 2, 1–44.) Gives Arab written text, phonetic transcription, and German translation of descriptions of wooing, betrothal, etc., among the Arabs of Sfax (ancient Taphura or Taparura) in Tunis, with explanatory notes. Also information on love-charms, "evil-eye," rain and weather magic, the brotherhood of the Aesâwis, whose procedures (music, dancing, etc., in honor of some particular saint) N. thinks are to be best explained by hypnotism and auto-suggestion. As an appendix Prof. Stumme gives Arab text, phonetic rendering, and German translation of a Tunisian song in praise of a maiden.

Perregaux (E.) Chez les Achanti. (Bull. Soc. Neuchât. de Géogr., 1906, XVI, 7–312, 32 fgs.) Valuable monograph, treating in detail of agriculture (daily life of woman; constituents of a *foufou*, —yam, banana, colocasia, arachids, palm-nut, etc.; palm-tree and its uses; cereals,—

maize, rice), industry and commerce (cotton, kola-nut, rubber, butter-tree; weaving, pottery, sculpture, basketry, house-building, gold-work, mining and exploitation of gold, gold-weights), family life (birth and childhood, marriage, death and burial, mausoleums), social life (government, justice, laws, punishments; festivals and public ceremonies, — yam festival, *adae*, etc.; army and war; symbols, — 21 are listed), psychic life (games and dances; legends and fables, — spider stories 5, religious legends, historical legends and traditions, fables 10; music and specimens of native songs; oratory and proverbs, — 106 in text with translations; language, — notes on phonetics, etymology; religion and fetishism, — individual and national fetishes, *abosum*, Dente cult, priests, etc.). P., who died at Kumassi in October, 1905, was a missionary in West Africa since 1891.

Schweinfurth (G.) Steinzeitliche Forschungen in Südtunisien. (Z. f. Ethn., Berlin, 1907, XXXIX, 137–181, 41 fgs.) Describes and figures 41 types (numbering 439 specimens) of flint implements "eolithic and old-paleolithic," found by S. at Gafsa (ancient Capsa) in southern Tunis in April, 1906. The predominant workmanship is eolithic, or, to use Verworn's term, "archeolithic."

Usages et croyances du Kiziba sur la côte sud-ouest du lac Victoria-Nyanza. (A. p. lo Stud. d. Trad. Pop., Torino, 1907, XXIII, 471–476.) Treats of sorcerer-kings, shamans, etc., among the Kiziba of the S. W. shore of the Victoria Nyanza. See *Mission des Pères Blancs* (Anvers), 15 Oct., 1906.

ASIA

Arnáiz (G.) Los habitantes de la prefectura de Chiang-chiu, Fu-kien, Sud China. (Anthropos, Salzburg, 1907, II, 59–67, 1 pl., map.) Treats of orography, rivers, bridges, climate products, etc., of the district of Chiang-chiu, province of Fu-kien in S. China. The map is accompanied by a list of the chief names in Chinese, Mandarin and the vernacular of Chiang-chiu.

Bloch (A.) Quelques remarques d'anthropologie sur les Cambodgiens actuellement à Paris. Avec présentation de portraits. (B. Soc. d'Anthr. de Paris, 1906, V^e^ s., VII, 354-365, 7 fgs.) Treats from observation, not measurements, of skin color, dimensions of lips and mouth, head-form and other external characters of the Cambodians visiting Paris. Appended are anthropologic data from Moura, Mondière, etc. B. sees a negroid origin (Negritos) for the Cambodians.

Brandenburg (E.) Phrygische Grotten. (Z. f. Ethnol., Berlin, 1907, XXXIX, 410–411.) Notes the caves and finds (hand-mills, cult-objects, etc.) at Sabundjbunar near Eskischehir. A detailed account of these finds will appear in an early number of *Memnon*.

Cadière (L.) Philosophie populaire annamite. (Anthropos, Salzburg, 1907, II, 116–117.) Records Annamite folk-philosophy concerning *troi*, the earth, and *dat*, the sky.

Caius (J.) Au pays des castes. Les Brahmanes. (Ibid., 35–39.) First part of article on Brahmans, consisting of an extensive bibliography, 36–39.

Carnoy (H.) Contes populaires arabes. (La Tradition, Paris, 1907, XXI, 21–34.) Continuation. French texts of five Arab folk-tales: The hedgehog and the jackal, The two robbers, The orphans, The three clever thieves, The old woman's daughter and the cuckoo, Twenty douros for a water-melon.

Casartelle (L. C.) Hindu mythology and literature as recorded by Portuguese missionaries of the early 17th century. (Anthropos, Salzburg, 1907, II, 128–132.) Treats of transformations of Vishnu, adoration of cow, etc.

David (*Mme* A.) L'idée de solidarité en Chine au V^e^ siècle avant notre ère. (B. Soc. d'Anthr. de Paris, 1906, V^e^ s., VII, 334–342.) Discusses the philosophy of Meh-ti and his doctrine of love equal and universal, — practical love evidenced by doing good deeds for others.

Finck (F. N.) Die Grundzüge des armenisch-zigeunerischen Sprachbaus. (J. Gypsy Lore Soc., Liverpool, 1907, N. S., I, 34-60.) Outlines the phonology and grammar of the language of the Armenian Gipsies in comparison with Prakrit, Sanskrit, etc. At pages 51–60 is given the Gipsy text of a legend, with interlinear and free translations. The Indian element in this language goes back to the Prakrit dialect, the so-called Apabhramsa. The influence of Armenian is clearly seen in the Gipsy speech.

Giraldos (P.) Preparacion y empleo de las resinas, gomas y aceites por los indigenas de Tong-King. (Anthropos, Salzburg, 1907, II, 211–218.) Describes

the preparation and use of resins, gums, oils, etc., by the natives of Tong-King, — the native names of these various substances are given.

Razlág (A.) De la "Grande Muraille." (Mitt. d. K.-K. Geogr. Ges. Wien, 1907, L, 333–338.) Notes on the great Chinese wall, past and present.

INDONESIA, AUSTRALASIA, POLYNESIA

Abel (P.) Knabenspiele auf Neu-Mecklenburg. (Anthropos, Salzburg, 1907, II, 219–229.) Continuation. Describes children's games and songs accompanying them (text and music): *A sársaratkaláue* or tug-of-war, *a hunulāga* (a sort of tag, a favorite game of youths), *a pinpidilulālang* or bamboo-knocking, *a kirkirakir*, a guessing game.

Egidi (M.) La tribu di Kuni. (Ibid., 107–115.) Notes on the Kuni, a tribe of Dilava in British New Guinea, habitat, fire-making, cooking, and kitchen utensils (4 ways of cooking), foods, meals, etc.

Lehmann (W.) Essai d'une monographie bibliographique sur l'île de Pâques. (Ibid., 141–152, 257–268, 4 pl.) Bibliography (with notes, introductory remarks, etc.) of Easter Island, — history, anthropology, linguistics, ethnography (wooden statues, hieroglyphic tablets, — 18 or 19 are known in various museums, etc.), collections, etc.

Mathews (R. H.) Beiträge zur Ethnographie der Australier. (M. d. Anthr. Ges. in Wien, 1907, XXXVII, 18–38.) Treats of mutilations (septum-piercing, extracting of teeth, amputation of finger-joints, scarification), dried hands as amulets, canoes, rafts, camps and dwellings, body-painting corroborees, plays and amusements, weapons (spears, throwing-stick, shields, clubs, axes, boomerangs), implements and instruments (yam-sticks, stone knives, chisels, bark and wooden ware, awls, bags, calabashes, hooks), fire-making by two methods, cooking, clothing and ornament, barter and trade, etc., among the Australian aborigines.

Müller (H.) Grammatik der Mengensprache. (Anthropos, Salzburg, 1907, II, 80–99, 241–254.) Grammatical sketch with illustrative sentences, appendix on word-formation, etc., of the Menge language of Papuasia, which has two dialects, that of Cape Orford and that of Cape Qori.

Pick (R.) Das Gajoland und seine Bewohner. (Mitt. d. K.-K. Geogr. Ges. in Wien, 1907, L, 379–401.) Treats of the Gajo country next to Acheen in the interior of north Sumatra, its inhabitants, etc.: Food and agriculture, religion (Mahometan), family (patriarchal) and marriage (*angkap*-marriage; Acheen element), houses, clans and "chiefs," law, family-life, festivities, weddings (favorite time is after rice-harvest, particularly the twelfth month of the year) and ceremonies connected therewith, — polygamy is rare, divorce rarer still, — circumcision, "medicine," death and funeral, etc. P. considers the complete subjection of the people of Gajo and Acheen to the Dutch only a matter of time.

Pöch (R.) Einige bemerkenswerte Ethnologika aus Neu-Guinea. (M. d. Anthr. Ges. in Wien, 1907, XXXVII, 57–71, 1 pl., 8 fgs.). Describes a protector against arrows used by the Poum of German New Guinea, fire-making by sawing, mourning-dress for women from the N. E. coast of British New Guinea, head-ornaments and hair-dress from Cape Nelson and Collingwood Bay, bark clothing industry, excavation of old pottery-fragments with ornamentation at Wanigela, belonging to "a forgotten people."

—— Reisen in Neu-Guinea in den Jahren 1904–1906. (Z. f. Ethnol., Berlin, 1907, XXXIX, 302–400, 7 fgs., 2 pl.) Treats of anthropological and ethnological characteristics of natives of Potsdamhafen (P. studied the Monúmbo four months), Sattelberg (Kai), Friedrich-Wilhelmshafen (Baining), Namatania, Matána-Táberan (a peculiar scarification of the forehead is in vogue), Cape Nelson (Kworafi), Port Moresby (various tribes), Thursday island, Merauke (Kaja-Kaja or Tugeri), etc. P. had with him several cameras (one stereoscopic), phonograph, etc., and succeeded in obtaining many kinematographic pictures of native dances, children playing, pictures of men and men engaged in various activities, etc. Noteworthy is the Hanuabada children's round dance figured on page 400. Interesting is the Bismarck Archipelago practice of trepanation after sling-wounds.

Reiter (P.) Traditions tonguiennes. (Anthropos, Salzberg, 1907, XI, 230–240.) Gives native text with interlinear and free translations, notes, explanation, etc., of Tongan legend of the origin of the gods.

Rougier (E.) Maladies et médecines à Fiji autrefois et aujourd'hui. (Ibid., 68–79, 6 pl.) Treats of Fijian folk-medicine past and present, — animal-causes of death and disease, local genii and cults, magic, fetishism ("a cult of 'demons' hidden beneath vegetable or mineral matter"), etc. Being no longer quarantined from the whites the Fijians have lost their robustness.

AMERICA

Aya (M.) Note sur un hamac des Indiens de la rivière du Vichada dans les pampas de Cundinamarca à l'est de la Colombie. (B. Soc. d'Anthr. de Paris, 1906, V^e^ s., VII, 484.) Notes on a hammock of *moniche* fiber and on the Indians of the Vichada region.

Boas (F.) Ethnological problems in Canada. (Congr. Intern. d. Amér., XV^e^ Sess., Québec, 1906 [1907], I, 151–160.) Among the problems enumerated and discussed are: The former distribution of the Eskimo and the relation of their physical type to the ancient long-headed people of the region of the Great Lakes (and the question of a possibly pre-Eskimo people in the Bering sea area, — this would make the Eskimo non-Asiatic in origin), the ancient relation of the Algonquian to the Athapascan (the westward distribution of the former is probably quite recent), the gap in our knowledge of the ethnology of the Mackenzie river region (the old form of culture in the heart of this region needs study as it is of great importance), the question of the ancient distribution of pottery, the investigation of the origin and distribution of the many types of culture now existing or having once existed (the relation of N. Pacific culture to that of N. E. Asia is important, — evidence of influence both ways is now at hand), the problem of the Aleutians and their culture (a reëxaminatian of the archeological data is in order), the phenomena of assimilation and differentiation (e. g., Salishan tribes) of culture in the N. Pacific region, the morphological grouping of Indian languages, e. g. Athapascan-Tlingit-Haida, Salish-Wakashan (and perhaps Algonquian), Kootenay-Shoshone (and possibly Iroquois).

Chamberlain (A. F.) The international Congress of Americanists at Quebec. (Univ. Toronto Monthly, 1906, VII, 145–151.) Notes on proceedings, members, papers read, etc., at the Fifteenth Congress held in Quebec, Sept. 10–15, 1906.

—— The vocabulary of Canadian French. (Congr. Intern. d. Amér., XV^e^ Sess., Quebec, 1906 [1907], I, 21–30.) Treats particularly of the contributions of the Canadian Northwest to the French Canadian speech: Topographic and geographic terms and names, place-names, appellations of Indian tribes, etc. At pages 26–29 is given a list of 84 words and expressions more or less peculiar to the West and Northwest.

van Coll (C.) Matrimonia indigenarum Surinamensium. (Anthropos, Salzburg, 1907, II, 40–42.) Brief account of marriage among the Arawaks and Caribs of Dutch Guiana. Author opposes marriage by capture as the original custom.

Congrès (Le) des Américanistes à Québec. (Ibid., 152–157.) Account of proceedings, notices of chief papers, discussions, etc.

David (C. E.) Les Montagnais du Labrador et du Lac St Jean. (Congr. Intern. d. Amér., XV^e^ Sess., Québec, 1906 [1907], 205–211.) Notes on the Montagnais of Labrador and Lake St John. Hunting, language, religion, character. The majority of these Indians now speak French, and read and write. They are born hunters and spent most of their time in the interior. Father David's attempts to find Montagnais etymologies for *Niagara*, *Hochelaga*, etc., are not to be commended. The population of the various Montagnais settlements counts up to about 2,000.

Ehrenreich (P.) Ueber den XVI. internationalen Amerikanistenkongress in Quebec vom 10–15. September, 1906. (Z. f. Ethn., Berlin, 1907, XXXIX, 249–258.) Brief account of proceedings of Congress with notes on principal papers read and description of Dr E.'s visits to Oklahoma and Mexico.

Forbes (J. G. L.) Étude sur les noms iroquois. (Congr. Intern. d. Amér., XV^e^ Sess., Québec, 1906 [1907], I, 301–309.) Treats of Iroquoian personal names from the points of view of etymology, grammatical form, traditional and sociological ideas. In its etymological sense the Indian's name "is a sort of sacrament hiding the mystery of the past." Names may be substantival (e. g., *Onas*, "feather") or verbal (e. g., *Tiras*, "He goes") and simple or composite. The Iroquoian *ohtara* corre-

sponds to the Algonquian *otem*, and the personal names reveal the group to which the bearer belongs. At pages 307–309 is given a list of personal names of men and women of the following "bands": Wolf, Rock or Big Wolf, Bear, Little Tortoise or Calumet, Big Tortoise. St Catherine *Tekakawitha* belonged to the clan of the Little Tortoise. As an example of Iroquois word composition the Abbé cites *Taontasakonatiatawitserahninonseronniontonhatieseke*, "Que plusieurs persons viennent acheter des habits pour d'autres personnes avec de quoi payer," a word suitable for the sign of a drygoods store.

Fourdrignier (E.) Musique bolivienne. (B. Soc. d' Anthr. de Paris, 1906, V^e^ s., VII, 450–460, 1 fg.). Treats of phonographic records of the music of Bolivian Indians (Quechuas, etc.). While several pre-Spanish characteristics are preserved the foreign influences have occasioned profound modifications and the music approaches more and more the European type. A melodic superfetation of *gruppetti* comparable to that in Moorish music is not due to direct influence of the latter.

Gagnon (A.) Les sauvages de l'Amérique et l' art musical. (Congr. Intern. d. Amér., XV^e^ Sess., Québec, 1906 [1907], I, 179–188). Dr G. argues that "it was only under the tonal influence of European music that the songs of our aborigines took rhythmic modal form, neighboring upon art, if not quite artistic," for "it is only with civilization that music becomes an art." The religious songs of the Indians of Quebec today "are chiefly adaptations of Gregorian melodies or of the airs of French songs." Specimens (native texts with music) of Ojibwa and Huron songs and hymns are given.

Gauvreau (E.) Les Dakotas: religion, mœurs, coutumes. (Ibid., 311–313.) Abstract only. Notes on soul-lore, deities, ideas about animals, ceremonies relating to childhood, mortuary rites, etc.

Goddard (P. E.) Assimilation to environment as illustrated by Athapascan peoples. (Ibid., 337–359.) Treats of the culture of the Hupa, Navaho, Apache, Kiowa Apache, and Sarsi. The Hupa "are in astonishingly close correspondence with their physical environment." It is by language that it is possible to connect them with the northern Athapascans. Linguistic bonds also make certain the Athapascanism of the Navaho, "much of whose present material culture, including the art, is largely a recent growth, being the result of direct or indirect contact with the Spanish. With the Navaho the Apache were earlier much more closely associated than since the advent of the Spaniards. The Sarsi of the Canadian Northwest belong linguistically with the northern Athapascans. The effect of long residence in these present environments of both the Pacific and the southern divisions is that "they have nothing in the way of culture, social customs, folk-lore, or religion, which can be looked upon as having survived from the time when they lived elsewhere or when they formed a single community by themselves or in connection with their friends in the north." It may be that all of the western portion of the continent was held once by the Athapascans and that the separation is due to the invasion of non-Athapascan tribes.

Gosselin (A.) Les sauvages du Mississippi (1698–1708) d'après la correspondance des missionnaires des missions étrangères de Québec. (Ibid., 31–51.) Notes on the Indians of the Mississippi (Tamarois, Akansas, Chiçachas, Chactas, Tonicas, Taënsas, Natchez, etc.), their population, languages (the Tonicas, Taënsas, and Natchez are stated to speak the same language; the Osage and Missouri are said to understand each other), religion (the Natchez had "temples," idols, perpetual fire, etc.), government, war, character, manners and customs, obstacles to conversion, etc., from Ms. of the French missionaries of Quebec, 1698–1708. See article on the Taënsa by Dr J. R. Swanton to be published in the next issue of the *Anthropologist*.

Hough (W.) The palm and agave as culture plants. (Ibid., 215–221.) Discusses the dependence of human culture on plant-life. The palm, through its educative and suggestive value, is "the most valuable culture-plant of the world." It "was the foster-mother of early man and influenced and sustained him in primary as well as in sequential attainments of culture," — indeed "wherever we observe man in contact with this wonderful tree, we find an individual and characteristic culture (rattan area of Indonesia, cocoa and Palmyra palm area of Ceylon and India, Seje palm of the Orinoco, data and doom palm area of Egypt and Arabia, etc.). In like manner, Mexican

civilization "is founded on the agave," a plant of American origin, whose focus is in the highlands of Mexico. This plant flourishes where maize, etc., cannot grow without irrigation. The agave, like the palm, is a primary source of alcoholic beverages. It has had a very important influence on ancient Mexican cults.

Hubner (G.) *und* **Koch-Grünberg** (T.) Die Yauaperý. (Z. f. Ethn., Berlin, 1907, XXXIX, 225–48, map, 12 fgs.) Brief account of the Yauaperý Indians of the Brazilian region, 62 W. long., 1 S. lat., numbering several thousand. Also vocabulary of some 170 words and phrases, a brief grammatical sketch, etc., with comparisons with other Kariban tongues. The Yauaperý has a number of Tupian loan-words. It is nearest to Bonari of the Kariban dialects. These Indians are not cannibals, as is generally believed.

Hugolin (—) L'idée spiritualiste et l'idée morale chez les Chippewas. (Congr. Intern. d. Amér., XV^e^ Sess., Québec, 1906 [1907], I, 329–35.) Discusses the religious ideas of the Ojibwa, particularly as stated by W. Warren in his *History of the Ojibways* and by Father Ragueneau in the *Jesuit Relations* for 1648. Father H. holds that the word *manitou* signified primitively "mysterious being," etc., and that its evolution toward "spirit," "God," is the work of the missionaries.

Humbert (J.) Les plans de colonisation espagnole au Vénézuéla et en Guyane étudiés d'après les documents des archives. (Ibid., 53–60.) Notes on the Spanish efforts at colonization in Venezuela and Guiana in the 16th, 17th, and 18th centuries.

Jetté (J.) L'organisation sociale des Ten'as. (Ibid., 395–409.) Treats of the social system, etc., of the Ten'as (i. e. "people"), an Athapascan tribe of the Yukon between Tanana and Koserefsky. Communism (there are "no chiefs, guides, or masters," — the Ten'a word for "chief," "authority," is *toyon*, a Kamchatkan term introduced by the Russians; but "every one commands and all obey if they see fit"; obedience is the chief point in the education of children; domination of public opinion), the family (Ten'a society "is rather an aggregation of individuals than of families"), tribal districts (faint traces of the former existence of such), crimes and punishment (three crimes, murder, theft, adultery, — injured person authorized to punish), property (hunters' rights, rights of husband and wife, sales as gifts, *potlatch*), hospitality. When a Ten'a is addressed as *kana* ("cousin") and asked some favor, to refuse is to deten'aize himself, to be unnatural to the utmost possible.

Jones (A. E.) Topography of Huronia. Identification of the sites of Huron and Petun villages of the time of the Recollet and Jesuit Missions 1615-1650. (Ibid., 299–300.) Brief résumé. The only site of missionary-martyrdom yet undiscovered is Etharita, or St Jean of the Petuns, where lie undisturbed still the remains of Father Garnier.

Jones (W.) Mortuary observances and the adoption rites of the Algonquin Foxes of Iowa. (Ibid., 263–77.) Treats of burial (4 methods) and funeral rites and observances (treatment of corpses, speech of farewell to the dead, distribution of property), mourning (absolute neglect of one's personal appearance). The ceremony of adoption (child for child, girl for girl, boy for boy, maiden for maiden, youth for youth, etc.), or setting free the dead (literally "throwing away the dead") is held within four years after death to free the soul of the departed from an uncertain state of existence, — if not thus performed "the soul becomes an owl to wander forever in sadness." The last, "adoption" of this sort took place in Kansas about 1854. This rite must have played an important rôle among the Foxes. The Sauk have an esoteric religious society for men and women (influential in preserving the old religion) resembling the Midewiwin of the Ojibwa. Of this Dr J. also gives a brief account, particularly the ceremony of "feeding the souls."

Laufer (B.) The introduction of maize into Eastern Asia. (Ibid., 223–257.) This learned and well-documented article discusses the history of maize in China, India and Farther India, Formosa, Japan, etc., the names for the cereal, etc. Dr L. concludes that maize reached China, *ca.* 1540, not by way of the sea-coast, but overland from Tibet (first into Ssech'uan and other parts of the West). It spread rapidly N., S., and E., and by 1560–1570 had reached the Eastern parts of China in the province of Fuhkien. Into India it was probably introduced by the Portuguese. The

rapid spread of cereals is an interesting culture-phenomenon.

—— Note on the introduction of the ground-nut into China. (Ibid., 259–262.) The evidence adduced seems to show that the peanut or ground-nut (*Arachis hypogæa*) was brought to China from the Malay archipelago or the Philippines by Chinese sailors or traders of Fuhkien. Its cultivation had already made progress in Chehkiang and Fuhkien in the latter part of the 16th century (the earliest date is 1573).

Morice (A. G.) La femme chez les Dénés. (Ibid., 361–394.) Treats in detail of the status and activities, etc., of women among the tribes of the Athapascan stock in Canada. Birth and childhood (girl begins hard work at about 5 years), puberty (a sort of second birth, as the ceremonies suggest; taboo and segregation; fear inspired by menses), marriage (5 methods of getting a wife — mutual consent, promise by parents in infancy, contest of physical strength with rival, seizure of woman by force, purchase,—the first was somewhat rare), polygamy (number of wives according to wealth and influence; a few cases of polyandry among the Sékané), prostitution (venal prostitution unknown; exchange of wives and offering of wife to guest), hard labor and occupations of woman, widowhood (mourning compelled by custom; becomes slave of late husband's relatives; *pseudo*-suttee; indignities of various sorts. Father M. objects to the statements of Brinton, Hale, Henshaw, and others who have taken a more favorable view of the position of woman in primitive America. Even woman chiefs (these exist only when male heirs have run out) are still women and it is only their public life that is much improved by such dignity being thrust upon them.

—— A reply to Mr Alphonse Pinart. (Anthropos, Salzburg, 1907, II, 179–200.) Discusses non-maritime habitat of Dénés, use of term Atna, Copper Indians (shown to be Déné), etc. A list of 60 Déné words showing the difference between an exploded and a non-exploded syllable is given.

Newcombe (C. F.) The Haida Indians. (Congr. Intern. d. Amér., XV^e^ Sess., Québec, 1906 [1907], I, 135–149.) After giving a sketch of their history as recorded by the whites and an account (based on Swanton) of their traditional origin and history, Dr N. treats briefly of archeology (old deserted village-sites now often used as potato-gardens; no rock-paintings and but two instances of rock-carving found by author, and one of these may be Tlingit), physical characteristics (tattooing has almost entirely died out), population (now *ca.* 600, but in 1787–1807 probably 8,400 for Q. Charlotte islands alone), linguistics (gives chief features of phonetics and grammar, after Swanton and Boas).

Obrégon (L. G.) Las sublevaciones de indios en el siglo XVII. (A. d. Mus. Nac., Mexico, 1907, 2a ep., IV, 145–180.) Treats of Indian risings in the 17th century (revolts of the Acaxees of Topia, the Tepehuanes, natives of Tehuantepec, Nejapa, Ixtepiji and Villa Alta, Tarahumares, etc.) in Mexico.

Oncken (A.) Ueber die "Schokleng" und "Cain-gaeng" in Südbrasilien. (Z. f. Ethnol., Berlin, 1907, XXXIX, 406–410.) Critique of previous article by Dr Bleyer. According to O. the "Schokleng" no longer exist; the "Caingang" call themselves *Camé*, i. e. "free," in contrast to the *Cai-qui* of the settled aldeamentos. The presence of sambuquis on the Iguassu is noted; also the blue pigment spot on a new-born Indian-Mulatto *métis*.

Pacifique (—) Quelques traits caractéristiques de la tribu des Micmacs. (Cong. Intern. d. Amér. Québec, 1906 [1907], 315–328, 3 fgs., map.) After some geographic details (discussion of the name, perhaps related to *Miramichi*), Father P. points out that the Micmac are neither degenerating nor diminishing in numbers in spite of consumption and alcohol, — their absorption by the whites is a matter of the distant future. They are peaceable and benevolent, and although cooped up in reserves get along pretty well. Micmac they "know by instinct," and English they learn in the schools. The Micmac "hieroglyphics" are almost abandoned now, alphabetic writing being now in use among them. A large number of Micmac now speak correctly, and if need be, write English, or even French, when they have dealings with the whites. The map of the Maritime Provinces accompanying this paper contains Micmac names only; the positions of the 60 reservations are also indicated. The Micmac name for the Dominion of Canada is *Ganataooeigŏpelnŏleoagig*, and for the United States *Pŏston* (i. e. Boston).

Pinart (A. L.) Geroglifos entre los Indios de la Florida. (Anthropos, Salzburg, 1907, II, 133–134.) Reproduces from Fray F. Romero a passage concerning a Floridian cacique and the use of "hieroglyphics" in that part of America.

Preuss (K. T.) Gesänge und Mythen der Cora. (Z. f. Ethnol., Berlin, 1907, XXXIX, 404–405.) P. reports great success in obtaining ethnological material, — texts of 60 myths, 15 long and 5 shorter songs, etc., besides hundreds of museum specimens.

Prince (J. D.) A Micmac manuscript. (Congr. Intern. d. Amér., XV^e Sess., Québec, 1906 [1907], I, 87–124.) Gives from MS. of P. Googoo, Jr., a Micmac of Cape Breton, the native texts of nine tales and one song (Indians of olden time, The Chibichkam's horn, The earthquake, The story of the butterfly, Noosewood or evening-star, The story of Mekmues, The loon, Story of the jack-o'-lantern, Song of the jack-o'-lantern, The singer), with interlinear translations and a few notes and references to parallelisms with the material in Prince and Leland's *Kúlóskap, the Master*. This article is valuable philological as well as folk-lore material.

Rivard (A.) Les dialectes français dans le parler franco-canadien. (Ibid., 3–20.) Discusses the contributions of the French dialects to the speech of French Canada (vocabulary, phonetics, morphology of Canadian French do not vary greatly from one part of the country to the other, and are almost entirely French; phonetics, morphology, etc.). The syntax and morphology of Canadian French do not vary greatly from one part of the country to the other, and are almost entirely French; phonology is quite uniform, while local variations occur in the vocabulary. This "relatively uniform" language has a French basis, "the common French (popular) of the north." In Canada uniformity was produced more rapidly than in France.

Robelo (C.) Diccionario de mitologia nahoa. (A. d. Mus. Nac., Mexico, 1907, 2^a ep., IV, 181–192, 193–224.) Entries *Matlactli omome itzcuintli — Nemontemi* of a dictionary of Nahuatl (Aztec) mythology. The more important articles are: *Matrimonio, mictlan, mixcoatl, nanahuatzin* (venereal disease, "bubas"), *nauholin*, etc.

Rousseau (P.) Les Hochelagas. (Cong. Intern. d. Amér., XV^e Sess., Québec, 1906 [1907], 279–97.) Treats of Cartier's visit and reception, the character and relations of the Indians of Hochelaga, their pottery, calumet, wampum, etc. The Abbé R. seems to believe that the Hochelagas were "Alleghanys" driven north by Iroquoian raids and conquests.

Roy (J. E.) Principes de gouvernement chez les indiens du Canada. (Ibid., 161–178.) General discussion of forms of government, laws, etc., among various Indian tribes of Canada past and present, — chiefs, old men and their influence, nobles and hereditary castes, land-tenure, family laws, marriage and status of woman, etc. R. recognizes the "Mound-builders" as a pre-Indian "civilized" people.

Schmidt (M.) Neue Erwerbungen des Kgl. Museums. (Ibid., 262–3.) Note on the Gönner collection of Peruvian antiquities just presented to the Museum. The collection was made by Hr Gretzer, of Hanover, and "exceeds in extent and value by far any other Peruvian collection brought to Europe." It is especially rich in wood-carving, textiles, and pottery from Ica.

—— Auswickeln einer altperuanischen Mumie. (Z. f. Ethnol., Berlin, 1907, XXXIX, 417–418.) Brief description of a Peruvian mummy from Pachacamac, now in the Museum für Völkerkunde.

Schmitt (J.) Chasses des sauvages à l'Ile d'Anticosti. (Ibid., 213–214.) A few notes on the Indian hunters who visit Anticosti — Montagnais from Mingan, Seven Islands, and even Godbout; Micmac from Gaspé, etc. Since 1893 the company controlling the island have forbidden the Indians to land. The white settlers liked the Montagnais better than the Micmac. The author has published a *Monographie de l'île d'Anticosti*.

Seler (E.) Einiges uber die natürlichen Grundlagen mexikanischer Mythen. (Z. f. Ethn., Berlin, 1907, XXXIX, 1–41, 11 fgs.) Treats of ancient Mexican deities and the natural bases of the myths connected with them. Discusses the ball-play symbolism and the theories of Preuss, etc. (Dr S. takes it to represent the contest of the sun with the moon in the sky and the killing of the latter by the former), the earth-deities and moon-deities (the transition of the latter to the former and the vegetation-deities is facilitated by the darkness of the nightly sky and also by the dying and rejuvenation of the moon), the migration legend of

Coatepetl, the "snake mountain," the Toltec question (Tollan, the "reed city," is not to be identified with Tlapallan, the sun-land, but rather with Colhuacan, the primitive home of the tribes in the west, the land of birth); Tezcatlipoca (a god of mixed traits), Quetcalcoatl (an incorporation of four deities of cardinal points), with whom is also fused the fire god. Dr S. considers that ultimately Quetzalcoatl and Tezcatlipoca "are simply supplementary forms of the moon-deity."

Stevenson (E. L.) Comparative fallacies of early New World maps. (Congr. Intern. d. Amér., XV^e^ Sess., Québec, 1906 [1907], I, 125–33.) Compares Portuguese and Spanish maps, as to location and contour of Greenland, "Bacallaos," Florida, Gulf of Mexico, Yucatan, W. Indies, S. America, etc. Errors in representation of west coast are also noted.

Thomas (C.) Some suggestions in regard to primary Indian migration in North America. (Ibid., 189-204.) Discusses particularly the migrations of the Athapascan (the Navaho and Apache were in their southern habitat long before the arrival of the Spaniards), Shoshonean (the pristine home was in British Columbia, but the Aztecs as a separate tribe evolved in northern Mexico), Siouan (theory of eastern origin rejected), and Algonquian and Iroquoian tribes (the Delaware priscan home was around the south end of Hudson bay; the Iroquois moved south and east). Dr T. assumes that "the original entry was on the northwest coast in the post-glacial era," from which point population spread "southward and southeast." The region west of Hudson bay was not however "a greater halting-place" than any other along the lines of migration, for "development was going on during the spread of population, — in fact, with the exception of occasional tribal migrations, development was the spread of population." In the W. Indies and C. America irruptions from S. America occurred.

de Villiers du Terrage (M.) Rapport du Chevalier de Kerlérec, gouverneur de la Louisiane française, sur les peuplades des vallées du Mississippi et du Missouri 1758. (Ibid., 61–86.) This report of Governor de Kerlérec made in 1785 contains interesting notes on many Indian tribes of the valleys of the Mississippi and Missouri: Kaskaskias, Metchigamias, Kaokias, Missouris and related peoples, Illinois and kindred, Arkansas, Natches, Tonikas, Houmas, Chetimachas, Chaouachas, Onachas, Tchaktas, Alibamous, Kaouitas, Chaouanons, Apataches (for Apalaches), etc. The number of warriors belonging to each tribe is given in most cases; the Alibamou tribes, e. g., are credited with 1,000, the Choctaws with 3500–4000. Some 40 or more tribes are referred to, and the Baron seems to have kept a journal of his journeys in this region. See *Gosselin*.

ANTHROPOLOGIC MISCELLANEA

Pacific Scientific Institution. — The corporate organization of the Pacific Scientific Institution was completed at Honolulu on December 13, by the acceptance of its charter, the adoption of by-laws, and the election of officers. The board of trustees consists of Governor Walter F. Frear, chairman; L. A. Thurston, vice chairman; President A. F. Griffiths, of Oahu College, secretary; Richard H. Trent, treasurer. William Alanson Bryan, who conceived the undertaking of the work the Institution is created to carry on, and who formulated its plans, was chosen president of the Institution. On accepting the appointment he made a report which showed the substantial support the undertaking has already received from influential citizens in Hawaii. In fact the gifts to it which have already been practically made, when they are announced, will challenge interest by their munificence.

According to an official statement published in *The Pacific Commercial Advertiser* of Honolulu, the main object of the Pacific Scientific Institution will be to organize, equip, and carry out a complete scientific exploration of the Pacific ocean and of its two thousand islands. Its chief energies will be devoted primarily to the solution of ethnological questions. The origin and migration of the various races of man inhabiting the vast region to be explored are matters whose solution would illumine the evolution of civilization and the condition of the human family anterior to written history or the records of reliable tradition. Intermingled with the elucidation of these perplexing problems are many other questions affecting the inhabitants of the Pacific which must be solved satisfactorily before a complete history of the human race can be attempted. To collect the whole of available Pacific lore and to make it so available to the scientific worker that its innumerable data can be investigated and compared, the assistance of scientific workers in many departments of natural history must be invoked. The ocean itself must be made to yield the secrets of its currents. These together with the winds of this vast region have no doubt played a great part in the distribution not only of the more humble natural species, but have facilitated the migration of the human race itself. The configuration of the ocean beds must be accurately determined and a knowledge acquired of the inhabitants not only of his great deep but of the island littorals and of the coral reefs.

The absolute necessity of undertaking the work at once is shown by the silent havoc which is relentlessly destroying so many native forms and primitive customs. Unless the investigation be prosecuted energetically now, in a very few years the attempt will be too late. Ten years in the condition of primitive man in the Pacific will bring about incalculable changes, and the same length of time will obliterate, forever, innumerable unrecorded zoological and botanical specimens.

With headquarters at Honolulu, parties of trained scientific workers will be dispatched on a specially-equipped steamer to the various island groups. At convenient centers substations will be established through which communication with the home office will be maintained. Each expedition will consist of properly-trained experts who will carefully record from each group everything of scientific interest. A careful and elaborate series of anthropometric measurements and other data will be tabulated; the technology, arts, manufactures, medicines, laws, and religion of the inhabitants will be studied, together with their language, mythology, legend, and general history.

The great work of exploration will, it is anticipated, be completed in about fifteen years. As soon as it can be made available for publication, exhaustive accounts upon the ethnology, anthropology, and zoology of each group will be published. The most important work of the printing of the results of the expedition, which will probably fill a hundred quarto volumes, will be deferred until the final work of exploration has been achieved and all the data relating thereto reduced to order. The chief and monumental work of publication will then be undertaken. Under the assistance of the foremost students of America and Europe the results of the whole expedition will be examined and compared.

As one result of the survey, probably the most wonderful and extensive collection of ethnological specimens that has ever been brought together from one region will be assembled in Honolulu. The disposition of these objects will be a matter of great concern, and it is hoped that the main collection will be retained to augment the already goodly collection in the local museum.

The honor of successfully setting in operation the great project of Pacific exploration is chiefly due to Mr W. A. Bryan, for many years a prominent scientific worker in the Pacific. A keen student of nature and a trained naturalist, with natural ability for organization and administration, resolute and practical, he long ago appreciated the great benefit to mankind to be derived from the accomplishment of the work which he is now called to direct. After years of close study of the successes and fail-

ures of former Pacific expeditions, and of the conditions necessary to a survey of this region, Mr Bryan undertook, as curator of the Bishop Museum, voyages to various outlying islands in the Pacific. In this manner he gained much valuable experience for the actual prosecution of the work.

Anthropology in Education for the Foreign Service. — It has long been felt that consuls appointed to foreign countries by the United States have not had adequate opportunity to acquaint themselves with the peoples to whom they have been assigned. For this reason it has been asserted that the consulate has never as a whole yielded the results anticipated or required by the Government. Recently, the easy-going philanthropic methods of appointing these officers have given way to a system offering a progression and permanence in these positions that will work a radical and salutary change, and the educational feature become an important adjunct of our consular service.

The training of public servants to represent the interests of the country in foreign lands may be undertaken largely under governmental auspices, through the agencies at the command of our political organization. Thus the minutiæ of official forms and procedure may be readily learned in the Consular Bureau, and other important data may be gathered from the Department of Agriculture, the Department of Commerce and Labor, the Immigration Bureau, the Patent Office, the Census Bureau, the Army Medical Museum, the Smithsonian Institution and National Museum, and the schools of the universities here in Washington. The Philadelphia Commercial Museum and other museums and commercial bodies in business centers also can contribute to this educational scheme, which is an extension of our higher education to an economic sphere. It will be necessary that these agencies be correlated, and a course at once simple and comprehensive laid out. It is questionable whether the Government would find it feasible, or advisable, for the present at least, to undertake the establishment of a preparatory institution for officials designated for foreign service, like those in operation in Great Britain, Germany, and France, or of late introduction in Mexico, but it should be done. There seems here a field which could be occupied by our universities, and without invidious comparisons with other centers and only as a generalization from known facts, Washington presents unexampled facilities for this sphere of effort.

It is recognized that the basis of education for foreign service is anthropological, since most of the misunderstandings and frictions between alien peoples has been due to lack of knowledge concerning racial habits, customs,

and modes of thought. Anthropology as a practical science, that is, one which is of service to the state, even to the test of an economic return, may be appropriately applied as a basis of education for foreign service. The history of the contact of civilized with uncivilized peoples is replete with examples of the disasters which an application of the principles of anthropology would have averted. Most nations have learned in the school of experience the methods of dealing with their foreign possessions. The Sepoy mutiny, for example, was the result of ignorance of native customs which cost thousands of lives and immense treasure. There are many instances as familiar, so that it may be said that most of the misunderstandings and friction between alien peoples has been due to lack of knowledge respecting racial habits, customs, and beliefs. Anthropology supplies a cure for the narrow prejudices and illusions of racial superiority that militate against progress in diplomacy. It is fundamental also in the exercise of that science whether the skill is required in large international questions or in minor matters connected with the introduction of our products. For this reason it would be well to insist strongly upon a course giving this groundwork, and it is in this service that practical as well as theoretical anthropology would be valuable. On the pedagogic side the university could present courses in ethnology which would bring together in reasonable compass the salient facts of race characteristics, including the varieties of mankind, subdivisions into units and distribution in ethnogeographic areas, their arts, etc. This should be a scheme related to other branches already taught.

Native arts, for instance, offer a point of approach for commercial exploitation in which anthropology can serve business. The study of the industrial arts of civilized peoples, which is a branch of this science, furnishes knowledge of the mineral, animal, and vegetal wants of peoples, the processes and inventions involved in their preparation, the agencies through which they are distributed, and the methods by which they are utilized and enjoyed.

What man does to supply his natural wants is entirely disproportionate to that which he does to supply his artificial wants, so that a proper stimulation of the latter would tend to increase enormously the commerce of the world. Culture advances through wants incited and supplied, and with uncivilized tribes the entrance of the trader outweighs all other influences. When artificial wants are gratified with materials that are substituted for things to which man has been accustomed, progress is rapid. This is a catering to definite wants that has been studied by England, Germany, France, and other European nations. It is an anthropological

method that benefits trade immensely, and though, by its alteration of primitive conditions, it seems unfavorable for the science, yet during its study great results are attained by securing a scientific knowledge of peoples through facilitating intercourse with them.

WALTER HOUGH.

Adolf Furtwängler. — We regret to record the death, on October 12, of Dr Adolf Furtwängler, renowned for his studies in classical archeology. Dr Furtwängler was born in Freiburg, Germany, June 30, 1853, and immediately after graduation from the University of Munich, in 1876, became associated with the Imperial German Institute, first in Italy, later in Greece. In a recent issue of *Records of the Past*, Dr Edmund von Mach says of this noted scholar: "At the excavations at Olympia he was present, and in 1878 he was actually in charge of this tremendous enterprise. In 1879 he was called to the University of Bonn, and in the next year to the Royal Museum in Berlin, where he left a few years later to accept sole charge of the Glyptothek in Munich, and to fill the professorship of classical archeology. In 1901, without relinquishing his other positions, he began excavations in Aigina and Orchomenos.

"Adolf Furtwängler was an inspiring teacher. His wonderful mind grasped the minutest details and his equally remarkable memory stored them for ready use, but he had breadth of vision — discerned essentials. He knew his subject as no other. He was at home in every museum, in Boston as well as St Petersburg; in Rome and Athens and Madrid, and all the public and private galleries of England. He knew the literature of his subject in its many ramifications, but his knowledge was essentially not book knowledge. He was kind and helpful to the beginner, but almost cruelly impatient of the mistakes of older men. He was, therefore, often attacked, and while he entered manfully into the feuds forced upon him, he generally bore himself with dignity.

"His untiring activity, his spirited writings, his eager and persistent search for more light on ancient art, his enthusiastic lectures, his versatility, and even at times his mistaken guesses as to the identity of statues, brought life into a study which was threatened with the death of self-sufficient acceptance of traditions. Until Furtwängler came one did not know how much there was still to learn of ancient art.

"His admirers, and they are legion, believe that there never was and never can be a man of such learning in a special field, and of such inspiring personality as Adolf Furtwängler. And even his professional opponents, while disputing this or that theory, call him a great man. Europe

and America have suffered a great loss in his death. Those who knew him and loved him are comforted at the thought that death claimed him in Greece, eager to the last to spread light over the scattered remains of antiquity. By his death, as well as by his whole life, he taught the nations to love and revere the memories of the glorious past of Greece and Rome."

The Sixteenth International Congress of Americanists will be held at Vienna, September 9 to 14, 1908. All persons interested in (*a*) the aboriginal races of America, their origin, distribution, history, physical characteristics, languages, customs, and religions; (*b*) the monuments and the archeology of America; or (*c*) the history of the discovery and occupancy of the New World, are invited to become either members or associates. The fee for members is four dollars; that for associates is one dollar. Members alone are entitled to all the privileges of the Congress and to receive its published proceedings. Communications presented to the Congress may be oral or written, and, according to the custom followed at former meetings, the languages admitted are German, English, French, Italian, and Spanish. The time allowed for the reading of each paper shall, as a rule, not exceed twenty minutes, but exceptions may be made in case of subjects of particular interest and general importance. For the discussions the time limit is five minutes for each speaker. All papers submitted to the Congress will, on the approval of the committee, be printed in the Proceedings. The officers of the committee of organization are: Wilhelm, Baron Weckbecker, aulic councillor and director of the Chancery of the First Chamberlain of H. I. R. Majesty, *President;* Dr Karl Toldt, president of the Anthropological Society of Vienna, and Dr Emil Tietze, president of the Imperial Geographical Society, *Vice-presidents;* Franz Heger of the Imperial Museum of Natural History, *General Secretary;* Dr Leo Bouchal, *Secretary;* Dr Karl Ausserer (Lenaugasse 2, Vienna VIII/1, Austria), *Assistant Secretary and Treasurer.*

How Were the Mounds Built? — Dr Cyrus Thomas, in the *American Anthropologist* for April–June, 1907, discusses the question of the amount of soil in the great Cahokia mound near St Louis, and the time required for its erection. To the facts adduced in his article and the puzzling problems thereby presented, Dr Thomas invites the attention of archeologists and antiquarians. I am glad that this interesting subject has been brought forward at this time, for I have been interested in it for many years as regards the building of the mounds in Canada, Minnesota, and the Dakotas. As early as the year 1887 I came to the conclusion that each

mound of the Northwestern states had been built by successive additions at intervals. This was reported by me in a paper on "Aboriginal Monuments of North Dakota" before the American Association for the Advancement of Science in 1889. The evidence is twofold, namely, the presence of two or more burial pits or graves in a mound, the contents of which graves have marked differences in decomposition; and, secondly, the signs of disturbance and the difference of compactness in the material of the mound itself. These two things have been so clearly visible in many of the mounds that I consider it impossible to regard them as accidental. My intention being to discuss this question at an early date in the account of my present season's field work, I shall not attempt to enter more fully into it in this communication.

THE MUSEUM, HENRY MONTGOMERY.
UNIVERSITY OF TORONTO.

Archeological Work in Arizona. — During the last season the Committee on American Archeology of the Archeological Institute of America offered properly qualified students the privilege of joining the field expeditions of the Institute in Colorado, Utah, and New Mexico. A number of students availed themselves of the opportunity to participate in the practical work of exploration, mapping, and excavation of ruins in the San Juan and Rio Grande basins. These expeditions closed on October 1. Through the courtesy of the Secretary of the Smithsonian Institution the committee is authorized to announce that the Government excavations at Casa Grande, in the Gila valley, Arizona, were resumed November 1, under the direction of Dr J. Walter Fewkes, to continue during the fall and winter, and that students may arrange through the Archeological Institute to participate in the work at this site. As Government institutions are not permitted to accept volunteer services, Dr Fewkes is authorized to pay a limited number of students (not to exceed ten) for their services in connection with the work a nominal salary of ten dollars per month, it being understood that they provide for their own traveling expenses and subsistence. This nominal salary will about cover field subsistence at Casa Grande. Students desiring to avail themselves of this opportunity should correspond with the undersigned as early as convenient. Applications should be accompanied by the recommendation of the professor under whom the applicant has studied.

EDGAR L. HEWETT,
Director of American Archeology for the
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Santo Domingo Antiquities. — The press announces that President Morales of the Republic of San Domingo has taken steps for the preservation, "for the glory of the republic," of the archeological objects in that country and for the establishment of a national museum for that purpose. In a recent proclamation on the subject the President says:

"The archeological objects found in the territory of the republic are those which belonged to our aborigines, to the epoch of the discovery of the island by Columbus, or to the period just succeeding that glorious event, and they are found on the surface of the earth or underground, in caves, caverns, mountains, sites of cities buried by earthquakes and in the ruins of those destroyed by time or abandoned by their inhabitants, as well as in other places.

"These objects are declared to be the exclusive property of the nation and therefore shall not be taken from the country nor appropriated by private persons.

"Private collections, made prior to the date of this decree, are excepted, but under no pretext whatever shall they be carried out of the republic.

"Any person violating the provisions of this decree shall be punished according to the law."

Phillips Academy Lectures. — The Department of Archeology of Phillips Academy, Andover, Mass., has announced the following course of free lectures:

October 31 — Evolution and the Ascent of Man (illustrated), Warren K. Moorehead.

November 21 — Prehistoric Man in Europe (illustrated), Charles Peabody.

December 5 — Prehistoric Man in America (illustrated), Warren K. Moorehead.

January 9 — The Plains Indians (illustrated), Warren K. Moorehead.

January 23 — Mound Building Tribes (illustrated), Warren K. Moorehead.

February 6 — Prehistoric and Primitive Art (illustrated), Charles Peabody.

February 20 — The Cliff Dwellers (illustrated), Warren K. Moorehead.

March 5 — Central and South American Archeology (illustrated), Charles Peabody.

March 19 — The Pueblo Culture (illustrated), Warren K. Moorehead.

April 2 — The American Indian in History and His Destiny, Warren K. Moorehead.

The Sparkman Manuscripts. — The Department of Anthropology of the University of California has acquired the linguistic and ethnological

manuscripts of the late Philip Stedman Sparkman. Mr Sparkman, by birth an Englishman, had lived long in Southern California. For a number of years preceding his death his business had brought him into frequent contact with the Luiseño Indians and had left him considerable time for the pursuit of an avocation. Becoming interested in the Indians, he spent this time in a study of their language, which he came to speak somewhat and to understand almost perfectly. In seven years he prepared one of the most exhaustive grammatical descriptions ever made of any American language, besides a Luiseño-English and an English-Luiseño dictionary of from three thousand to five thousand terms each. He also collected texts to illustrate the grammar, and prepared an account of the ethno-botany and mode of life of the Luiseños. The grammar is of particular value in that no description of the structure of any Shoshonean language has ever been published, beyond the brief sketch by Mr Sparkman of Luiseño itself in the *American Anthropologist* for 1905.

Dr G. B. Gordon, curator of ethnology in the University of Pennsylvania Museum, who spent the summer in Alaska, conducting the work of the University Expedition, returned to Philadelphia at the end of October, bringing with him an extensive ethnological collection from the valley of the Kuskokwim river. The expedition reached the head of the Kuskokwim from the Fairbanks district and floated down its entire length during the summer. On the upper river very few natives were encountered; these are members of the Dené group, speaking a language similar to that of the Tanana Indians at Fort Gibbon, on the Yukon. Half-way down the river the ethnic conditions become much more complex. Here an Eskimo influence is apparent. A Dené element still survives, together with a third element whose identification forms an interesting problem. At the mouth of the river and for 300 miles up its course, the population is chiefly Eskimo.

Anthropology at Harvard. — We have received an outline of the lectures for the first and second half-years in the introductory course in anthropology at Harvard College. The lectures are:

Introduction.

Somatology.

Prehistoric Archeology.

I. — Europe, Asia, Africa, Australia: Eolithic Culture; Paleolithic Culture; Neolithic Culture; Bronze Culture; Iron Culture.

II. — North and South America: Early Man in America (Paleolithic Man); Shell Heaps or "Kitchen Middens"; Mound Culture;

Pueblo Culture (the Southwest); Mexican and Central American Culture; South American (Peruvian) Culture.
Ethnology: The Arts, Sociology, Religion, Language.
Ethnography.

WITH the assistance of Yale University, and at the initiative of the Connecticut Academy of Arts and Sciences, the publication is planned of a volume of several hundred pages illustrating the collection of prehistoric relics obtained by the late Professor O. C. Marsh, and gathered in the province of Chiriqui, Panama. There will be some seven hundred illustrations, on which draftsmen from New York are already at work, besides a set of chromolithographs made in Germany. Dr George Grant MacCurdy, Curator of the anthropological section of Peabody Museum, will prepare the volume.

IN THE SERIES of non-technical lectures descriptive of the achievements of science and modern scholarship during the academic year 1907–1908 of Columbia University, Professor Boas delivered the lecture on Anthropology, December 18, and Professor Wheeler that on Archeology, January 8. Professor Giddings will deliver the lecture on Sociology, February 26; Professor Woodworth that on Psychology, March 11, and Professor Jackson that on Philology, April 1.

DR PAUL HAUPT, of Johns Hopkins University, honorary associate in historic archeology in the United States National Museum, has been designated by Secretary Walcott as the representative of the National Museum and the Smithsonian Institution at the Fifteenth International Congress of Orientalists to be held in Copenhagen during the second half of the month of August, 1908.

DR CHARLES PEABODY, of the anthropological department of Harvard University, has returned from a four-months archeological tour abroad. He officially represented the Peabody Museum and the Division of Anthropology at the Prehistoric Congress of France held at Autun, and at the International Reunion of Anthropologists held at Cologne.

DURING THE early part of the present year the Anthropological Institute was requested by King Edward to add "Royal" to its existing title, thus showing it to be under the patronage of the Crown. This having been duly accepted by a vote of the Council, the official name became the Royal Anthropological Institute of Great Britain and Ireland.

MESSRS L. J. DE G. DE MILHAU and J. W. Hastings, who accompanied the South American expedition from the Peabody Museum, Harvard University, in 1906–07 as ethnologists, have returned to this country after a successful trip to the region of the Madre de Dios. Dr Farabee and Dr Horr will continue the work in the field.

A PORTRAIT of Dr Arthur J. Evans, keeper of the Ashmolean Museum, has been presented to Oxford University by a number of those interested in archeology, including fifty-five American subscribers. The portrait, which is the work of Sir William B. Richmond, R.A., depicts Dr Evans in the ruins of the Palace of Knossos.

CAPTAIN DR GEORG FRIEDERICI, of Kiel, Germany, former attaché of the German embassy in Washington, and noted for his studies of American Indian subjects, expects to undertake, early in the spring of 1908, an expedition to the Bismarck archipelago in the South Pacific in company with Professor Sapper.

DR GEORGE GRANT MACCURDY, curator of the archeological collection of Peabody Museum, Yale University, has during the last summer mapped out the state of Connecticut for a systematic archeological survey, bearing particularly on traces of the Connecticut Indians.

DR FRIEDRICH S. KRAUSS, of Vienna, has translated into German, with notes, the late Captain John G. Bourke's *Scatologic Rites*. Dr Krauss has also about ready for publication Volume IV of his *Anthropophyteia* and another volume of Slavic folklore.

DR BERTHOLD LAUFER, lecturer in anthropology in Columbia University, has accepted the position of curator in the Field Museum of Natural History in Chicago and has proceeded on a journey to Tibet, where he will spend three years.

DR J. W. LOWBER, F.R.G.S., F.R.A.S., of Austin, Texas, has returned from Europe, where he has been studying the great universities and museums both on the continent and in Great Britain.

THE Société d'Anthropologie de Paris has elected Dr Aleš Hrdlička, of the United States National Museum, an associate foreign member. Heretofore he had been a corresponding member.

M. LE DUC DE LOUBAT has been honored by election as an associate member of L'Académie des Inscriptions et Belles Lettres of France.

DR J. G. FRAZER, of Trinity College, Cambridge, has accepted the new chair of social anthropology in the University of Liverpool.

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F. W. HODGE, *Editor*, WASHINGTON, D. C.

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